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ORIGINAL COMMUNICATIONS.

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THE RESULTS OF PARTIAL INFERIOR TURBINECTOMY.

BY GEORGE B. MCAULIFFE, M.D., NEW YORK.

Partial inferior turbinectomy—and, by that, I refer to the exsection of the lower edge of the bone, along with the usually redundant fringe of mucous membrane—has afforded me the best results in the cure of the major symptoms of chronic hypertrophic rhinitis.

In watching the postoperative cases, for the probable appearance of unpleasant sequelæ, such as have thrown total ablation of the lower turbinate into disrepute, there has been brought to my notice the relief of certain symptoms not usually categorized among the results of the procedure. While, theoretically, the measure would seem to be designed to increase the drainage space of the nasal floor, and to diminish the super-abundance of mucous surface, it would not appear, theoretically, to be useful in increasing physiological nasal inspiration (in view of the accepted theory that the inspiratory current is arched upwards and backwards). The operation, properly performed, does augment respiratory freedom not so much by the increase of the inferior meatus—an increase which benefits expiration—but by the enlargement of the middle meatus due to the post-operative contraction. The subsequent molding of the inferior turbinate and the preservation of the breath guiding function of its arch are most important factors in increasing inspiratory comfort. It is the loss of the inferior turbinal arch which destroys physiological inspiration in atrophic rhinitis and in total ablation of the bone. A fact impressed on my mind in the after-treatment of these cases for the maintenance of free inspiration was the important role which the degenerated adenoids of the pharyngeal vault played

in respiratory obstruction. A woman who presented the appearance of perfect function after partial inferior turbinectomies complained, however, of imperfect inspiration until I removed a small piece of adenoid tissue from the vault—a piece so inconsiderable in size as hardly to merit removal; nevertheless the patient evinced from that time the greatest relief in breathing. That this effect of the degenerated tonsil is explicable by the theory of mechanical obstruction is not reasonable; that the tissue plays some part in the vasomotor condition of the nasal mucosa would be more rational.

The gradual cessation and relief of the hawking which characterizes some cases is owing to the increased floor drainage, the gradual decrease of glandular hyperæmia and the curtailment of the secreting surface. Some specimens of turbinates removed show trailing from the edge masses of typical adenoid tissue. The effect of this degenerated membrane under inflammation may be imagined. The result after removal is, to put it mildly, much more beneficial than cauterants to the convexity or to the interior of the turbinate.

In some cases after section one can see more of the posterior wall of the pharynx by anterior rhinoscopy than normality would allow. The subsequent molding of the turbinate generally brings about a more normal aspect. In these cases also complaint is made for a time of a dry pharynx. The throat may or may not show the dessication which the symptom would imply—a symptom due both to the abbreviation of the secreting surface and to the interference with the guiding arch of the turbinate, permitting too direct ingress of air. Other patients maintain that on awakening and taking a long inspiration there is a desire to cough. I have never seen these symptoms persist. The subsequent changes in the turbinal stump and the readjustment of the secretory osmosis bring relief.

The beneficial effect produced on respiration has given rise to a theory that the result of the operation is equivalent to placing the patient in high altitudes. The credit of this phase of the operation belongs I believe to Dr. Charles Bucklin who has performed it on consumptives with benefit. While my experience in this treatment of phthisis is very limited and incidentally acquired, I can only re-echo the opinions of the patients that the operation ameliorates the respiratory symptoms greatly. It would, perhaps, be fatuous to claim more.

Two stout patients whose inferior turbinates had been reduced volunteered the statement that they no longer got out of breath when climbing stairs. I can only theorize on the probable explanation.

Another case treated for unilateral conduction deafness with tinnitus, complained also of sudden attacks of vertigo which came on so quickly that she felt as if some one had struck her at the base of the skull. A partial turbinectomy was done for a possible aural effect. The aural symptoms did not improve in the least but she maintained that her vertiginous attacks had almost ceased. The occasional seizures were so slight as to preclude the necessity of a constant attendant. Here again I do not hazard an explanation of the probable association of pathological causes.

The effect of the operation on the course of chronic catarrhal otitis has been as disappointing as the majority of nasal treatments for the cure of this disease in the stage of fibrosis. If it has any benefit it is because of the cessation of the faulty habits of nasal hygiene—the hawking and screatus which upset the auditory air pressure balance and provoke a constructive hyperæmia and a circulatory tinnitus. Inferior turbinectomies so far as they control these vicious habits tend to slow the progress of an increasing aural disability.

The palliative influence of the operation on hay fever was brought out in three cases operated on last year. They suffered very slight attacks this year. In one case, however, the middle turbinate had also been treated. The inability of the turbinate after section to swell sufficiently to make points of irritative contact may explain the lightness of the seizure and the diminution of the secretion. The diminution of respiratory freedom is so gradual in hypertrophic rhinitis that patients maintain the nose is free until the result of a partial turbinectomy gives them a standard by which they recognize their former disability. The habit of blowing the nose hard which is marked in a number of these cases results from the inability to clear successfully the upcurved inspiratory channel of stuffiness by blasting through the straight expiratory channel—the inferior meatus. The stuffiness of the nose due to its diminished air space becomes a frequent coryza under a slight systemic or local irritant.

The relief of nasal stuffiness and an increasing immunity from colds are prominent results of partial turbinectomies. The acute catarrhs can not develop points of contact and therefore resolve more quickly. The increased physiological air space benefits the tonicity of the tissues and the character of the excretory mucus. The gradual cessation of the nasal screatus affects favorably the passive congestion of the mucosa.

When a septal spur exists with the hypertrophic turbinate it is often puzzling to decide which offers the greater obstruction to function and which should be removed. In deciding this I have found

that the more anterior the spur the greater will be the relief from its removal and in such a case both spur and turbinate are operated on, the spur first and the turbinate later, if necessary. When the spur is farther back, it is often practicable to ignore its existence and to pay attention to the turbinate alone. The reasons for these differences in the effect of bony and cartilaginous spurs are found in the fact that the anterior spurs interfere more with the inspiratory current and are subject to greater changes in size under inflammatory irritation. We all have felt the chagrin of sawing off a cartilaginous spur which in situ appeared of fair size but when cut and exsanguinated appeared too insignificant to show to the patient.

A few words in conclusion about the operation. I always do the turbinectomy within fifteen minutes after cocainization is begun since after that period the systemic nervous effect of the drug overbalances the local anæsthesia. I continue to use the extemporaneous solution of the dried suprarenal gland since it is more reliable than its succedanea and for dispensary work much cheaper. Here it can be dispensed to the patient in five grain capsules for home use. While I occasionally use the scissors I find that my bevel saw is more serviceable since it can be seen and directed. I always sharpen it for each operation. It takes a couple of minutes to do the turbinectomy. It is better not to saw through the mucous membrane entirely since the exsected portion readily slips down the throat or is forced down in the efforts to grasp it. When the turbinate edge hangs by a strip of membrane, it is grasped by the forceps and twisted around one or two revolutions until it is separated. If it is pulled the mucous membrane strips off of the turbinate, comes away in parts and hampers the correctness of the operation. To insure a clean cut, the saw is used with the bevel to the median line and the point is directed somewhat outwards toward the Eustachian orifice in order to catch under the posterior end of the bone. When this point is neglected the saw will often rasp off the turbinal edge and cut up the mucous membrane. After the saw is well engaged its edge is directed horizontally inwards. It is very easy to take off more of the bone than is required. The application of ice for 12 hours and a spray of adrenalin or suprarenal solution every hour or two for a day will reduce the sequelæ of hemorrhage and sepsis to a minimum. Occasionally crusting will complicate the healing. The iodine and glycerine mixture meets this indication admirably.

57 East 65th Street.

OBSERVATIONS ON THE THERAPEUTIC VALUE OF MEDICATED OINTMENTS IN CERTAIN AFFECTIONS OF THE NASAL CHAMBERS.*

BY ALEXANDER W. MAC COY, M.D., PHILADELPHIA.

Medication of the nasal chambers by medicinal substances has incited the interest of all rhinologists since the beginning of the specialty. The employment of medical treatment in affections of the nasal chambers in the form of watery solutions and sprays and powders and vapors is our common knowledge. To attempt to discourse on such matters would not only appear trite, but would subject one to the criticism of "bringing coals to Newcastle." In asking attention to the consideration of the use of medicaments in the form of *soft* ointments, in diseases of the nose, I hope to avoid criticism, hoping that such *form* of medication may not be in common practice as a system and that it may not appear to be lacking in freshness of interest.

The employment of ointments has been my practice for upwards of twenty years. Each succeeding year has increased my respect for them and extended their field of usefulness.

The selection of a proper base in which remedies could be incorporated was not a difficult problem. The various petroleum bases were found available, and appear to meet all necessary indications. Petroleum bases are in a class by themselves, and have no just competitors in any other bases made from animal or vegetable substances. Petroleum bases, being non-oxidizable and easily sterile, and readily rendered softer and softer by proper compounding, appealed to me in many ways, and have been my choice in the various and varied combinations with drugs which in my judgment appeared useful and curative.

The employment of ointments in the case of diseases of the nasal passages is confined to cases strictly *non-surgical* and in cases following surgical procedures, when the case is again relegated to *medical* medication. The choice of drugs must be left to the individual selection, and, as in solutions, etc., the preference will greatly vary, my contention applies primarily to the *form* of medication and to their availability.

The *form* of ointments is especially available for medication of the nose, if we reduce the consistency of the petrolatum to a very

* Read at the Twenty-sixth Annual Meeting of the American Laryngological, Rhinological and Otological Society, held in Atlantic City, N. J., June 2, 3 and 4, 1904.

soft and semi-fluid product. The solubility of drugs in a petroleum base varies greatly, but much greater amount may be incorporated by suspension or mixture. The emollient properties of ointments, their grateful impressions on the nasal mucous membrane and their wonderful power of distribution over the tissues, together with their continued therapeutic effect, suggest their extended employment.

The *availability* and great convenience make a strong claim for their employment by the patient. As ordinarily dispensed by the pharmacist in jars, etc., and with the ordinary consistence of petroleum jelly, ointments are not available nor are they convenient. Putting up in collapsible tin tubes makes them not only convenient, but permits of the jelly being reduced to a soft consistence by the addition of sufficient fluid petroleum to render their use very efficient.

Ointments dispensed in tubes are most convenient for the patient, and, as the supplementary assitance, for their medical adviser in the interim of visits to him. They are so conveniently carried to business or home that the interval of visits to one's office is usefully employed and the progress of the case is decidedly advanced. The effect of office care can be kept up, and in this respect shows a marked superiority over washes, sprays and nebulization, etc. The convenience of this manner and form of personal treatment has strongly appealed to me for many years. If we consider the utter inefficiency of the usual manner of employing sprays and nebulizers by the patient, we can, I think, realize the great superiority of soft ointments dispensed as above mentioned. During the winter months the employment of ointments appears to meet the artificial environment of home living and the vicissitudes of our climatic variations.

I have largely substituted the use of nasal washes, sprays and powders for home treatment by the prescribing of ointments, varied greatly, of course, according to the individual requirements and the local needs of each patient.

My experience taught me that frequent washings in most cases were harmful, caused much congestion of membrane, and rendered the nasal chambers much more sensitive. Since the employment of soft ointments during the winter season, I have found relapses much less frequent while patients are undergoing treatment for chronic conditions.

In the case of acute rhinitis, the medicated ointment can be so formulated that the relief afforded to all of the annoying symptoms is most grateful and satisfactory. The prescribing of medicaments in this form in acute rhinitis has been a distinct advance.

In many conditions in which it is necessary and urgent that cleansing solutions be first used, a continuous medication can be maintained during the interval of visits. After operations for outgrowths, deviations of the septum and cauterization, after a proper lapse of time, the healing process is greatly hastened by the employment of ointments, In cases of eczema of the nasal vestibules and lip and crust formations, the institution of an ointment promptly cures the conditions.

It is needless to mention the individual drugs rendered useful in the form of ointments. The same class of medicines generally employed in washes, vapors and powder for the relief of nasal conditions is selected, the difference shown being in their enhanced value in offering desired results. If I should mention calomel as a valuable remedy in many cases of hyperplasia it might be an exception, for so far as I am aware, calomel is not commonly employed for such conditions. Quinine is another drug locally used in ointment form which I have used with profit, in chronic rhinitis especially, where much excitability was present, and in the edematous condition present in naso-motor cases. Quinine, I imagine, is not used locally by many rhinologists.

SUMMARY.

1. That notwithstanding our bent of mind towards surgical procedures for the relief of diseases of the nasal chambers, the rational employment of drugs must still occupy our attention.

2. That our constant and persistent use of nasal washes, especially during the winter season in our climate, tends to harmful results.

3. That by the employment of curative medicaments in the form of soft ointments in the nasal chambers, we can avoid certain risks following the use of washes, etc., and at the same time further the advancement of our patients toward a speedier cure.

4. That the availability, convenience and adaptability of medicated unguents in the therapeutics of the nasal chambers appeal in a rational manner for their employment.

5. That ointments prescribed should be dispensed in collapsible tin tubes as a protection from contamination, and because this form of dispensing renders them most convenient for use at all times and in all places.

DISCUSSION.

Dr. H. L. SWAIN was much interested in this paper, because he had been frequently guilty of using ointments in the nose for one reason or another. With regard to the different drugs and their

chemical affinity, he states that he often prescribed the yellow oxid ointment and found that in patients who happened to be taking at the same time potassium iodide there resulted a chemical combination of the drugs, with a very vicious reaction. He did not remember ever having seen this fact stated in print, and thought his own ignorance of it had caused considerable trouble to his patients. He had made use of this same chemical affinity in getting a reaction in certain cases where there was sluggish ulceration. He believed there was a definite field for the use of preparations containing oil in one or another form in the treatment of the acute affections of the nose.

Dr. C. C. RICE understood in this connection that compressible tubes were used, but failed to see how thereby applications were made to the entire mucous membrane. He desired to be enlightened on this point.

Dr. J. SOLIS COHEN suggested the use of what is known as a "striping pencil." The ointment is smeared along the end of this pencil and it is then pushed backward until it reaches the pharynx and then brought forward and out with a rotary motion, thus covering the entire mucous membrane. These pencils are about an inch long, and are used for painting the stripes in carriage wheels.

Dr. W. K. SIMPSON had experienced difficulty in applying ointments of sufficient density. If some method of doing this could be formulated he would consider medication by ointments an ideal type of treatment.

Dr. G. HUDSON MAKUEN called attention to a possible danger in the use of ointments. He referred to a patient of his who had for the last eight or ten years applied vaseline to his nose before retiring in order to insure sleep, as otherwise his nose became so dry that it kept him awake.

Dr. MACCOY first mentioned the various ways in which ointments put up in tubes might be applied. He had one patient who simply removed the cap from the tube and squirted the ointment up his nose, and although this was entirely foreign to Dr. MacCoy's method of application, he could see no reason why it *might* not be applied in this manner, but sterilization would be impaired. He found the ordinary ointment of vaseline, such as that purchased in the shops to be too thick and firm for use, it being necessary to dilute it. In order to make it fit for use one or two drams of fluid vaseline should be incorporated in one ounce of the ointment.

With regard to the *form* of application it was considered that the less irksome this is made for patients the more apt they are to continue the treatment. He had advised applying the ointment upon cotton brushes, made with matches and toothpicks. These could be carried in small boxes in the pocket and were available for business, traveling, etc. They were, of course, only used once. Dr. MacCoy never used strong or severe ointments on account of the irritation produced, all the ointments being mild in character.

Primary Carcinoma of the Lingual Tonsil—J. ZENDZIAK—*Monatschr. f. Ohrenh.*, Berlin, May, 1904.

The author reports a case in a man 62 years old. An ulcerated tumor had existed for three months in the region of the left lingual tonsil; there were present infiltration of the epiglottis and left posticus paralysis. The submaxillary glands were enlarged. Pain, dysphagia and salivation were marked. There were frequent hemorrhages from the tumor. In spite of the fact that the patient had had syphilis 30 years before, and that the location of the tumor was in favor of the diagnosis of gumma, the author considered the diagnosis of carcinoma justifiable for the following reasons; the age of the patient, the appearance of the tumor, the cachexia, the involvement of the submaxillary glands, and especially the frequent hemorrhages. The syphilis had been treated energetically at the time of its occurence and the administration of large doses of mercury and iodides had no effect upon the tumor. Tuberculosis was considered excluded. No microscopic examination of the tumor was made.

YANKAUER.

Remarks Upon the Localization of Sound Perception—ALBERT BING—*Monatschr. f. Ohrenh.*, Berlin, May, 1904.

Bing compares the Weber test to a pair of scales, the intensity of sound-perception representing the weights. When the sound is perceived equally in both ears the scales are level, and the pointer is directed toward the median line. When the diffusion of the sound waves through the external auditory canal into the atmosphere is prevented by disease of the sound conducting apparatus the scale descends and the pointer is directed toward the diseased side, i. e., Weber is in the diseased ear.

YANKAUER.

CASES OF PRIMARY AND SECONDARY TONSILLAR HEMORRHAGE FOLLOWING REMOVAL BOTH WITH TONSILLOTOME AND SNARE.

BY EDWARD J. BROWN, M.D., MINNEAPOLIS.

The following are the only cases of serious post-operative tonsillar hemorrhage which I have met with in 15 years special practice, and are perhaps worth recording.

Case I. In October, 1891, just before beginning an evening's quiz of a class of medical students at my office, I removed with a Bishop tonsillotome, both tonsils, large and fibrous, of a student 28 years of age. An hour later I found that he had nearly filled with blood a large metal cuspidor and that an artery near the base of the left tonsil was steadily spurting a stream which had the appearance of being about 1 m.m. in diameter. After nearly an hour spent in futile efforts to stop the bleeding with astringent applications, success was finally attained by persistent, long continued pressure and counter-pressure with the thumb and fingers of the right hand, after which there was no recurrence. That was my last tonsillotomy with a sharp cutting instrument in an adult.

Case II. Miss N., 33 years of age, had had three attacks of quinsy on the right side. On May 22d, 1900, after separating the submerged tonsil from the supra-tonsillar fossa and the pillars with a dull-pointed sickle-shaped knife, it was removed with the Peter's snare armed with number 10 piano wire. Owing to the inflammatory adhesions and the consequent difficulty in drawing the tonsil from its bed a small part of the base was not removed. Fifteen days later while visiting at St. Paul, a severe hemorrhage occurred in the night and persisted for seven hours before the physician who was called, could control it.

Case III. On June 21st, of this year, I removed the left tonsil of a six-year-old girl with the heavy wired Peter's snare, the tonsil being drawn out as much as possible with a vulsellum forceps, but not separated from the pillars. The tonsil was not completely removed. Two days later there was severe hemorrhage for which the family physician was called, and which he had some difficulty in controlling. The mother stated that the child vomited two quarts of blood. When brought to the office the following day I found a

pouting granulation at the middle of the lower half of the tonsil.

My experience is decidedly in favor of tonsillectomy by means of the heavy snare and wire, by means of which in a manageable patient, the tonsil may be thoroughly enucleated in its capsule. After such thorough removal I have never seen serious hemorrhage.

39 Syndicate Block.

Intra-Tracheal Injections in the Treatment of Pulmonary Tuberculosis—W. W. MANGUM—*Mobile Med. and Surg. Journ.*, May, 1904.

In an enthusiastic plea for the employment of intra-tracheal injections in the treatment of pulmonary tuberculosis, the author advocates the use of ichthyol. The drug, he says, is a powerful vaso-motor constrictor of mucous surfaces, causing a rapid disappearance of the hyperæmia. It is readily diffusible, anti-septic and promotes metabolism. Five per cent of the ichthyol is mixed with pure cod liver oil and with an ordinary laryngeal syringe, one drachm is injected into the trachea. The method of introduction is similar to that of infflating. When properly performed the injections provoke no unpleasant symptoms and the medicament is readily absorbed by the mucous surfaces.

Twenty-one cases are reported of which fifteen, or seventy-five per cent were cured; nineteen, or ninety-five per cent cured or improved. The average time in which daily injections were required was four weeks. All cases were carefully diagnosed by physical examination, family history and the use of the microscope. Seven had the tuberculin test. Four weeks after being discharged as cured the patients remained free of all physical signs of the disease and the sputum showed no evidence of the disorder. STEIN.

The Blood-supply of the Teeth and of the Antrum of Highmore—ALEXANDER STRUBELL—*Monatschr. f. Ohrenh.*, June, 1904.

The author made section of an upper jaw in which the blood-vessels had been injected. He was able to demonstrated that the blood vessels of the mucous membrane of the antrum and those of the sockets of the teeth were connected by an anastomosing network of small arteries and veins. The communication was especially direct where the layer of bone between the root of the tooth and the antrum was thinnest. YANKAUER.

A CENTURY OF INTUBATIONS.*

BY GEO. F. COTT, M.D., BUFFALO, N. Y.
Clinical Professor of Otology, University of Buffalo.

One of the greatest discoveries of the last century was the art of intubation by Joseph O'Dwyer of New York. Earlier in the century the French tried a crude method but abandoned it again after a very short time. It remained for O'Dwyer to perfect the method by patient practice extending over a long period of time. Nor did he give it to the profession until he had made all possible improvements. One can imagine what a great amount of labor was expended; how hundreds of children were operated upon with varied success, until at last, in 1885, he promulgated his discovery, giving every possible detail necessary for carrying out the operation. Poor, honest, nervous O'Dwyer probably hastened his death by his devotion to the little ones seeking his aid. Shortly before his death the writer invited him to address the Roswell Park Medical Club; he answered that he would have to decline because of his extreme nervous and debilitated condition when appearing before an audience as it made him suffer acutely. I did not blame him, for shortly after, within a very few months, he died after a very short illness. But his name will be handed down from generation to generation as the beneficent inventor of intubation. This fact will never be forgotten for the reason that O'Dwyer gave to the profession an invention almost beyond the possibility of improvement. Many attempts have been made during the twenty years of its use, to add something to simplify still further the method, but all have fallen by the way and the O'Dwyer tube still has the field and bids fair to hold it indefinitely. At the end of the experimental stage, O'Dwyer was at a loss what to name his perfected operation. Dr. Bush of Koumiss fame, who assisted him in many of his experiments, suggested that since he was putting one tube into another, it might be well to call it "Intubation." The name impressed O'Dwyer so forcibly that he adopted it instanter and "intubation" it remains. It may be well worth writing on this subject at the present time for the newer generation of physicians will rarely have opportunity to witness the operation, much less to perform it; it is being consigned more and more to

* Membership Thesis-American Laryngological, Rhinological and Otological Society

the surgeon, because anti-toxin is doing for the general practitioner what intubation was intended for; to him it will soon become a lost art.

STATISTICS.

Up to and including 1892, before the days of anti-toxin, there were collected 54,665 cases of tracheotomy, with 14,839 recoveries, or 27.14%. Dillon Brown, up to 1888 collected 2372 intubations with 646 recoveries or 27.02%. The difference is but one sixth of one per cent. That was not a very wonderful showing, but even in that early time of intubation all the advantages were with the new operation: bloodless, no cutting, no chloroform, no terrible anxiety for half or an hour; all this was suddenly spirited away by the so-called new fangled idea of relieving a suffocating child in half a minute. Yet these statistics were not convincing to the old war horses who treated diphtheria the good old way and believed all new things purely rattle-brained fallacies. Although fifteen years have passed since these statistics were first published, many of the old physicians have not altered their opinions nor has anti-toxin added to their embellishments. Not many years ago it happened in several instances in this great city of ours that a tube saved the child which had been abandoned by the regular physician. His opinion was partly due to faulty diagnosis and partly to a want of confidence in the new operation. Since the advent of anti-toxin, it is seldom a question of tracheotomy versus intubation; but seldom intubation and rarely tracheotomy. Corroborative statistics are altogether on the side of the laryngeal tube. With anti-toxin used early, I really do not remember a child that died after intubation, save a single one.

AGE OF THE OPERATION.

The idea of intubation is not very new. In fact, Hippocrates over 3000 years ago advised in cases of dyspnœa that a pipe be introduced into the troat to admit air into the lungs. Medical literature does not teem with innumerable instances when this method was used. Thus millions of suffering humanity were allowed to suffocate for the want of a little American ingenuity. It was not until 1780 that Chaussier, according to Bosworth, proposed the introduction of a flexible tube, either through the nose or mouth; but the result seems not to have been very brilliant for the idea was abandoned. Bouchut, in 1858, described his method of revival of intubation. He used a silver tube 5-6 in. long with a collar to prevent it from slipping into the trachea; a string attached likewise prevented its disappearance and facilitated its withdrawal. Bouchut's contrivance was condemn-

ed by a committee of the French Academy of Medicine; nothing more was heard of it. These are really the only authentic instances which history records, until 1885, when O'Dwyer's genius and great perseverance throughout a period of five years, completed his discovery and gave it to the world, where unimproved, it holds supreme today.

RE-INTUBATIONS.

The writer had, for a long time, averaged twelve cases a year, but since the advent of anti-toxin, the number has gradually dwindled down to two or three, so that now he has abandoned it altogether and has been succeeded by his able assistant, Dr. James E. King, who has become quite expert in its performance, having eleven cases so far.

I have intubated over one hundred patients, (or to be exact 108*,) between the ages of nine months and thirty-five years. I have experienced nearly all the accidents attendant upon its performance, with the possible exception of a false passage, and strange as it may seem, my first and last cases were the most trying. These hundred patients were intubated all the way from once to fifty times each. When I had seen but one performance, my friend, Dr. C. Niemand, now of Hamburg, Germany, requested me to introduce a tube in a little patient, in the practice of the son of my preceptor, Dr. Dorr. The attempts were fruitless for half a dozen trials, but were finally successful. The last case, the 108th, girl age six, was first intubated by Dr. King, then by me, and as the child could not breathe without this means, she was intubated regularly by one or the other of us for six months at the Riverside Hospital. During this period tracheotomy was resorted to several times; the larynx was cut through from top to bottom three different times for the purpose of curettement. The child finally recovered and now, two year later, is entirely well with a perfect voice.

"SOME CASES NEED WATCHING."

It is quite important to know which cases to watch closely and which ones, one may safely turn over to the nurse for a few days. I will eliminate stenosis of the larynx due to syphilis, tuberculosis, carcinoma, etc., for they are rare compared with diphtheria; therefore the latter will engage our attention, first, because it is quite common, and secondly, because it occurs almost exclusively in children. Of course it is our object to save the child's life and therefore we must

* Another case was intubated since this was writteu for stenosis not due to diphtheria, patient was removed from German Hospital before diagnosis could be made. Probably peanut shell in larynx.

be familiar with certain symptoms present before intubation. The operator is called in consultation to intubate if necessary. He finds the little patient quite comatose, lips livid, reflexes of conjuntivæ abolished, no reaction by gagging, breathing shallow but harsh, pulse weak, but not much above normal. In my experience in such cases, the general opinion was that it was too late, that the child was dying. Not much! Introduce the tube rapidly; do not shut off the air a moment longer than is absolutely necessary; your patient will soon revive and generally get well. Here it becomes necessary to differentiate between diphtheric intoxication and want of oxygen. Supposing you have above symptoms with rapid pulse, rapid respiration, pulse soft and compressible, indicative of fatty heart. You then have quite a different result to expect. This child will invariably die, whether you intubate or not. The fact is, intubation is unnecessary as the child is suffocating from the effects of the diphtheric toxin on the nerve centers and not from false membrane in the larynx.

"WHEN TO LEAVE THE STRING ATTACHED."

In case a child is intubated, observe whether the membrane fills the throat as well as the larynx, the nose and naso-pharynx. In such a case, the membrane in all probability is likewise in the trachea. Then always leave the string attached to remove the tube immediately and to replace it if necessary, for it may become obstructed when least expected. On the other hand, when the throat is moderately affected, although marked stenosis, nose clear, no matter how prostrate the patient, introduce the tube and release the string as soon as reaction has set in, *never until the child coughs.* If the string is detached before this time, cough may bring the tube up, in the physician's absence and the child die before help arrives. When we have to deal with an obstreperous youngster, who would immediately pull out the tube as soon as it was introduced here, then, remove the string, *but watch your patient well* or the undertaker will soon relieve you. When you find it absolutely necessary to leave the string attached, drawing a pair of stockings over the hands of the patient and pinning them to the gown will easily overcome the child's desire to disobey.

"WHEN TO REMOVE THE TUBE."

The tube must be allowed to remain in situ until the patient has perceptibly improved. This may be twenty-four hours or five or six days. Then keep within hailing distance, for a certain percentage will need re-intubation. However, this can not be told before hand. Never allow a patient to partake of solid food while wearing a tube.

I once lost a little boy who had so much improved that he was able to play about the room; he was eating bread and some crumbs finding their way down the tube provoked a violent cough; the tube was ejected and before help arrived the patient suffocated.

"TUBE SELECTED."

The size of the tube is gaged by the age of the patient; seldom will it be necessary to use one larger. However, if it is necessary, do not be in a hurry to increase the size because the previous one had been coughed up. Rather wait awhile, several hours at least, and when, as occasionally happens in a strenuous child, tissues relax easily, do tracheotomy. In that way your patient will soon be tided over, for otherwise granulations will surely follow the introduction of a large tube, and then stricture necessitating a permanent tracheal tube. It is well to replace the same tube several times. It will usually remain after a while.

In a very small percentage of cases the tube will slip down into the trachea in the effort of extraction; then it must be removed, perhaps, best by tracheotomy unless it can be reached through the larynx. Two of my cases succumbed because of this accident. The first one four weeks after, the tube had ulcerated through the left bronchus, having before this time had no untoward symptoms, suddenly died. The other was instantly recognized but further interference was forbidden. Immediate tracheotomy would have saved both children.

"DANGERS OF INFECTION."

Of course, the operator is exposed to the dangers of infection, through injury, broken skin, explosive cough, etc. To avoid the first accident, a piece of surgeons' adhesive strip may be placed over the second or third joint of the left index finger, reaching well up the back of the hand. This part of your anatomy comes forcibly in contact with the sharp teeth of the patient, in reaching down the throat to raise the epiglottis. The second, broken skin such as cuts, abrasions, scratches, etc., probably forgotten; by placing the hand in ammonia water, these injuries will be forcibly brought to your attention and collodion applied or a finger cot worn. The third, explosive cough. Ordinary spectacles may be worn to protect the eyes. Patients do not often cough during the operation, but when they do, it is too late to get out of the way. More than once I caught expelled membrane on the eye-glass. Two physicians of our own city can testify to this danger; one lost an eye, and the other just escaped death.

The surgeon who intubates must likewise be prepared to do the more formidable operation of tracheotomy. He may have but an instant's notice to perform the latter when the former would not be feasible. During my experience with intubation it has fallen to my lot to tracheotomize twenty-five patients; one of these a number of times. In several instances the patients would certainly have died except for the knife.

To intubate is not so very difficult after all and every isolated practitioner should be familiar with the operation so that he can act immediately when life is in danger, for certain number of people will defer sending for the doctor until it is too late. The quick-witted physician will then have added another to the million already saved by intubation.

Surgical Treatment of Chronic Empyema of the Antrum of Highmore—C. E. BEAN—*St. Paul Med. Journ.*, June, 1904.

Marked advance has been made of recent years in the surgical treatment of this disease. Treating the antrum through its natural ostium, or an enlargement thereof, has not proven successful in chronic cases. The operation of Mikulicz by perforating through the outer wall of the inferior meatus and into the antrum is not always sufficient. Neither is the method recommended by Desault of opening through the canine fossa, or that of Cooper, by drilling through the alveolar process. The operation that has attained prominence of late is that known as the Caldwell-Luc operation, whereby the cavity is first invaded by means of an extensive excision of the anterior wall. The anterior part of both inferior and middle turbinals are removed and the wall between the nose and antrum broken through. After thorough curettment and irrigation of the cavity the muco-periostium of the outer antral wall is sewed in place so as to completely close this wound and the cavity is packed and drained from the nose. STEIN.

The Evolution of My Theory of a System of Safety Reflexes of the Upper Respiratory Tract—W. LAMANN—*Monatschr. f. Ohrenh.*, Berlin, June, 1904.

In considering the various reflexes resulting from the introduction of foreign bodies such as instruments, into the mouth, pharynx and larynx, the author has evolved certain theoretical deductions which have been described in a previous publication. In the present article he describes the nasal reflexes and includes them in his theoretical classifications. YANKAUER.

SYPHILITIC TRACHEAL STENOSIS — DILATED DURING ACTIVE ULCERATION BY A LONG INTUBATING TUBE: CURED.*

BY LEE MAIDMENT HURD, M.D., NEW YORK CITY.
Assistant Surgeon, Manhattan Eye and Ear Hospital.

H. C., male æt. six years. Family history: Mother has never had any evidences of syphilis and she says her husband has never had any symptoms.

Previous history: When three years old he was kissed by a woman whom it was afterward found had specific trouble. About three weeks after being exposed he complained of sore throat and the glands at the angle of the jaw became enlarged, three months later these glands were removed, probably under the impression that they were tubercular. It took nearly a year for the wound to heal.

About one year ago he began to have dyspnœa with some hoarseness and dysphagia, nine months ago superficial gumma appeared on the right thigh.

April 30th, 1904, the case was admitted to the Manhattan Eye and Ear Hospital. Examination showed several superficial ulcerations on the hard palate and the gumma on the thigh still remains. The patient had great difficulty in breathing but his voice was fairly good. He was sleepless and coughed considerably, the extreme dyspnœa made it impossible for him to lie down. Dr. Jonathan Wright saw the case in consultation and it was decided to do a low tracheotomy to relieve the urgent symptoms. On opening the trachea, a syphilitic infiltration below the larynx was found with an aperture about as large as an ordinary silver probe. The dyspnœa was at once relieved by the tracheotomy tube. Medication inunctions twice daily of 50% Ung. Hydrarg. and Pot. Iod. gtt. 5 t. i. d. increased one drop daily.

May 12th. Tracheotomy tube was removed but had to be replaced two days later, in order to relieve the dyspnœa.

May 19th. An intubating tube for the patient's age was introduced but did not, apparently, reach past the stenosis as it did not relieve the dyspnœa. I found the epiglottis was entirely destroyed by ulceration, and that the orifice of the larynx was flush with the tongue.

* Presented before the Section on Laryngology, New York Academy of Medicine, Nov. 23, 1904.

May 31st. Intubated again with same result and then measured for longer tube.

June 28th. After spending nearly a month in having a tube made, in the meantime I had run the potassium up to grs. 60 t. i. d., I introduced a tube three inches long by one-quarter inch in diameter with a right angle clamp attached through the tracheotomy wound as recommended by Rogers.

July 2d. I removed intubating tube and replaced tracheotomy tube.

July 5th. Again inserted intubating tube and removed it at the end of twenty-four hours, replacing the tracheotomy tube.

July 12th. Corked tracheotomy tube and allowed the patient to breathe through the natural passages.

July 18th. I removed the tracheotomy tube. He breathing normally through the natural passages. At this time the pot. iod. had been raised to grs. 70 t. i. d. and the inunctions were still continued.

July 25th. The patient was discharged from the hospital and before leaving I had him run up three flights of stairs which caused no dyspnœa.

Nov. 23d. All manifestations of syphilis have disappeared.

The interesting points in this case are, dilating the tracheal stenosis while actively ulcerating by introducing the intubating tube four times, the first two for only a short interval and the last two for a considerably longer period and the second point is the large doses of potassium iodide required to influence the disease. The child took on an average 180 grs. a day for over a month and still takes at intervals 180 grs. a day without any ill effects.

15 East 48th Street.

The Use of Thiosinamin in Chronic Middle Ear Catarrh—MARTIN SUGAR—*Arch. f. Ohrenh.*, Leipzig, Aug., 1904.

Thiosinamin acts by causing a phagocytosis which has a selective action upon scar tissue, causing softening and absorption of the latter. It is therefore indicated in adhesive processes following middle ear suppurations, in the early stages of otosclerosis, in luetic processes, etc. It is contra-indicated when active inflammatory processes are present. The remedy may be administered by injection into the middle ear through the catheter, or by hypodermic injection.

YANKAUER.

A NEW TONGUE DEPRESSOR.

BY ALICE G. BRYANT, M.D., BOSTON, MASS.

The tongue depressor to be described has been used for several months with great satisfaction. It is simple in its construction and more accurately meets the anatomical contour and comfort of the patient than the tongue depressors ordinarily found in the instrument shops. It is made of one piece of steel and is over all 24 centimeters from tip of blade to end of handle. Its advantages are four-fold:

(a). The curve of the blade and the angle it bears to a perpendicular line brings uniform pressure along the whole surface of the tongue, rather than limiting the perssure to the distal end of the blade, and thus hurts the patient less, and gives the manipulator a longer and freer period for examination. Again the curve of the blade enables one to depress and at the same time draw forward the tongue at its base so as to bring into full view the region in and around the larynx.

(b). The convexity between blade and handle acts as an arch spanning the row of incisors, thus avoiding the uncomfortable sensa-

tion of the metal grazing the teeth. The convexity also prevents the tongue depressor being pushed to the base of the tongue for it is met by the lower central teeth. The advantages of the latter point is seen in operations where nice adjustments are necessary and time limit is of great value. The element of gagging is thus removed as much as possible, both by avoiding any undue pressure at the base of the tongue, and the preventing pushing forward the tongue depressor over the surface of the tongue to its base.

(c). The handle is at an angle of 40° and prevents the examiner's hand from coming in contact with the patient's clothing. It is well adapted to children who do not always maintain an erect position in throat examinations and for those patients who have short necks and full chests.

(d). The handle is held comfortably, not projecting beyond the closed hand and the thumb rest gives the physician absolute control over the instrument.

We express our thanks to Codman and Shurtleff for their courtesy and kind co-operation in carrying out the plans of the design.

416 Marlborough Street.

SOME IMPROVED NOSE, THROAT AND EAR INSTRUMENTS.*

BY EDWIN PYNCHON, M.D., CHICAGO.
Professor of Rhino-Laryngology and Otology, Chicago Eye, Ear, Nose and Throat College.

In the removal of submerged or semi-submerged tonsils, when for any reason the more radical operation of tonsillectomy by "cautery dissection" cannot be done, as, for example, owing to the length of time required, or the necessary expense of treatment thereby, then, as an alternative, dissection with knives can be practiced, and, while the immediate hemorrhage from this operation is almost invariably greater, the general results are good in the way of removing the cause of both subjective and objective symptoms, even though the cosmetic results may not be so favorable.

Fig. 1.—Tonsil Knives (½ size.)

The knife A is used for severing, as a first step, the attachment of the tonsil to the anterior pillar, and can be used on either side. As a second step, the attachment to the posterior pillar is severed, using knife B for the left tonsil and knife C for the right tonsil. As a third step the tonsil is dissected loose from its posterior attachment, using the separators shown, being respectively D for the right tonsil and E for the left tonsil. During these steps, the patient is to hold down his own tongue with a suitable tongue depressor, while the tonsil is being pulled outward toward the median line by the operator with a good tonsil forceps. Personally I use the ones I employ in cautery dissection. These knives are intended for use by a right-handed operator. After the use of the knives, as already described, the tonsil being operated is still attached at the bottom, but is quickly removed by the use of a cold snare.

* Presented before The American Academy of Ophthalmology and Oto-Laryngology at Denver, August 24-26, 1904.

This snare is a modification of the Sloane snare in which several changes have been made. In the Sloane snare the distal opening of the canula is flattened so as to constitute a slit, whereby the direction of the loop is better guided and controlled. In order to not destroy this valuable feature, and still permit of the use of a bodkin (commonly called stylet by surgical instrument dealers), whereby a short wire loop can be employed, I have had made on one side of this flattened end of the canula a triangular opening and a transverse groove. In this way these two valuable features can be combined. The ecraseur nut has been much increased in size and provided with

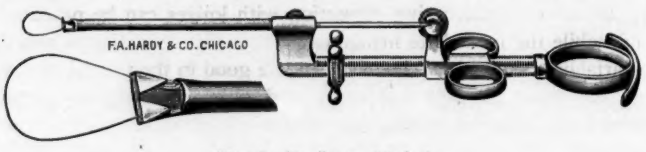


Fig. 2.—Tonsil snare (⅓ size.)

projecting points to facilitate easy operation. By being provided with a more delicate canula and bodkin this snare would also do for nasal work. In tonsil work I use a No. 7 steel piano wire.

This tonsil tenaculum I occasionally employ when the forceps have not taken a good hold. Tortion for the control of tonsillar hemorrhage has been advised by different writers. The shank of this tenaculum has been flattened so after tortion has been applied the desired position can be retained by the patient closing his teeth.

In order to control a hemorrhage during tonsillotomy this instrument can be used, and with it a strong and steady pressure can be

Fig. 3.—Tonsil Tenaculum (3/5 size.)

applied for a short time, which is often sufficient. Before use the distal button should be covered with a few thicknesses of gauze fastened by a string about the shank. If desired, the gauze can be reinforced with a little cotton, so as to better absorb any astringent remedy with which it is moistened. Monsel's solution, or a 90-grain solution of the nitrate of silver, are the best to use.

In cases where hemorrhage after a tonsil operation is severe, or where pressure for a prolonged time is desired, this device is preferable to the tonsil presser last described. This instrument is of horse-

shoe shape, and is so thin at the point where it emerges from the mouth that the teeth and lips can be quite tightly closed, which adds to the convenience of its use. The inner end is provided with the usual hard wood button, and also with an oval cup, which latter I prefer. Before applying this instrument, the cup is first filled with cotton, secured by a thread passing through an opening at the bottom of the cup, and medicated with such astringent as desired. At the external end is a metal pad with screw adjustment. The metal

Fig. 4.—Tonsil presser (½ size.)

pad is not upholstered as is the common custom, for the simple reason that such upholstering is not so good as the several thicknesses of a properly folded towel. By operating the screw pressure is exerted below the angle of the jaw. If the screw in any case does not seem to be long enough, the deficiency can be easily supplied by the use of an additional towel as a pad. This hemostat is equally applicable to either side, and when applied can be so covered by a folded towel wrapped about the chin that the patient can, without

Fig. 5.—Tonsil Hemostat (½ size.)

attracting attention, take such street car or other ride as may be required in order to go from the office to his home.

When adenoids in early life are not removed, an atrophic degeneration may follow, which is not infrequently observed in adults, and is, when present, a source of annoyance which should be removed. For these cases the ordinary adenoid curettes are of but little

value. The curette shown consists of a small ring knife with cutting edges at either side. In its use, after cocaine anesthesia, the curettement of the pharyngeal arch is done by scraping both upward and forward, as well as downward and backward, from the point of greatest depression. Two or three such motions are required in order to remove all of the soft tissue.

The two features of this instrument are first, the employment of two pins, in addition to the usual terminal roughness, in order to better avoid the possible loss of the cotton, and second, the placing

(**Fig. 6.**—Naso-Pharyngeal Curette ($^2/_5$ size.)

of a groove upon the convex surface so by the use of a small knife blade or shears the cotton can be easily removed after the treatment. The apparent delicacy of this applicator is in accordance with my conviction that but little rigidity is required in such an instrument, which should be so introduced as to avoid obstruction instead of being forced thereby, and the ring end lightly held between the thumb and forefinger while the shaft passes between the middle and ring fingers gives ample control thereof.

The new speculum here shown is not intended as a substitute for the one previously described, and now so generally used, but is de-

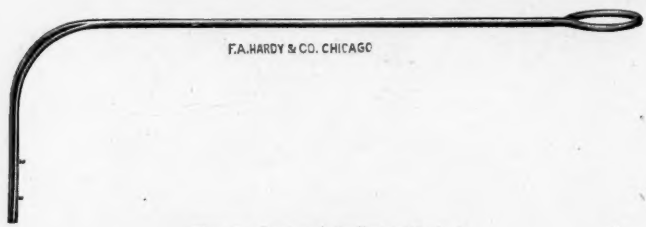


Fig. 7.—Laryngeal Applicator (½ size.)

signed for certain special cases and conditions. The blades are made somewhat narrower in order that they may be wider separated when the nasal opening is smaller than usual. The outer horn is to hold up flabby tissue sometimes present about the nasal opening, which hangs down like an awning and obstructs the view when the earlier style of speculum is used in certain cases wherein the ball on one side must be introduced into the vestibule and against the septum.

The set screw is to prevent its being opened beyond a desired point while operating, in case of a very tender nostril, or where a soreness or chap exists as a result of irritation.

After intra-nasal operations, particularly where the bone has been wounded, when hot carbolized douches are to be used, this tip will

Fig. 8.—Special Nasal Speculum (1/5 size.)

be found serviceable. Its oval shape permits of easy introduction, and its carrying capacity approximates the so-called "rapid flow" tips.

This snare is both light and powerful. The tip is so delicate that when strung on either end of the wire, after the wire has been intro-

Fig. 9.—Nasal Irrigation Tip (full size.)

duced, it can be used to guide or change the position thereof. The form of binding posts employed permits of ease in fastening or unfastening the wire, and they are so arranged that both ends of the loop can be simultaneously pulled in the usual manner, or, if desired, when a particularly tough pedicle is encountered, one end of

Fig. 10.—Fibroid Snare (2/5 size.)

the wire can be fastened to the stationary post, while all of the traction is applied to the opposite end thereof, and thus secure a sort of sawing constriction.

This snare is of sufficient size to be easily grasped by the operator's hand, and of convenient form for easy manipulation. It is provided

with two canulæ, one being of steel and containing two parallel holes whereby the wire is prevented from twisting, and so the loop can be guided with greater accuracy. This valuable idea is borrowed from Dr. H. B. Young of Burlington, Iowa. The other canula is of virgin silver, so it can be bent as desired, in order to conform

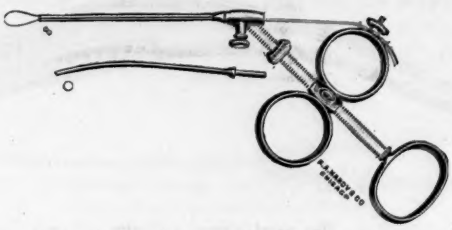


Fig. 11.—Aural Snare (½ size.)

to the course of a crooked external auditory canal. The wire ends are fastened by screw pressure instead of by twisting about a post. The adjusting nut is not for tightening the loop, but to hold it where set, so it can not be unconsciously made larger.

The Siegle pneumatic speculum (often incorrectly called an otoscope) has for years been to the otologists one of the most valuable

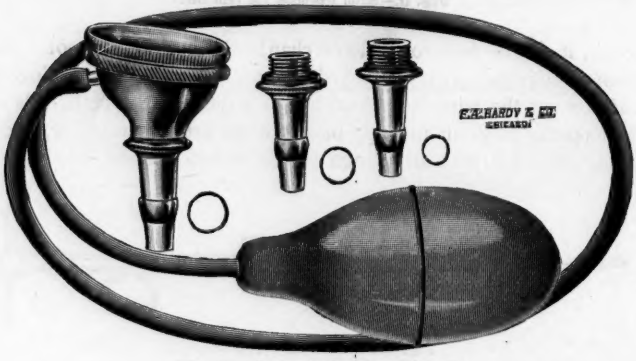


Fig. 12.—Pneumatic Speculum (¾ size.)

diagnostic instruments, though as usually made, with the simple conical ear piece, it often can not be used with satisfaction. Dr. Burnett appreciated this fact, and in order to make it more surely fit air tight in the canal opening he had placed at the end of the ear tube an abruptly conical enlargement. While this is thoroughly ef-

ficient for the purpose specified, a sufficient view of the drum-head is often prevented by the canal being of too small size, or when deviating too much from a straight line. My improvement consists in moving this enlargement of Burnett part way up the ear piece, so it, as well as the entire point, can be covered by a short piece of rubber tubing. In this way the swelling makes it air tight, while the point is far enough introduced to get near to the bend in the canal, and thus furnish an unobstructed view. This feature has been incorporated in a metallic speculum on the market, though an extra milled ring has been applied about the outer end, so as to give a better holding surface. The glass is of correct magnifying power so as to about double the field being inspected. In order to get the best results when using the pneumatic speculum, and prevent the condensation of vapor upon the glass, it is necessary that the device be first warmed over a gas burner, the bulb meantime being operated a few times, so as to fill the instrument with heated air. Lastly, the rubber covered tip must be slightly moistened.

Fig. 13.—Eustachian Catheter (4/5 size.)

My preference has always been for the silver catheter with bulbous end. As usually made, the distal opening of the Eustachian catheter has an angular corner, which is even disagreeable when touching the finger, and must of necessity be irritating when touching the delicate mucous membrane about the tubal opening. My improvement consists simply in the reaming out of this opening, so as to efface the angular edge alluded to, or in other words, so the opening will be rounded inwardly, as is the bulbous end rounded outwardly. Latterly, in compliance with the suggestion of Dr. M. A. Goldstein, I have been using catheters materially shorter than those in general use and find them more satisfactory.

These instruments, as described, are being made by the surgical department of F. A. Hardy & Co., of Chicago.

Columbus Memorial Building.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON LARYNGOLOGY AND RHINOLOGY.

Stated Meeting, Held November 23, 1904.

Dr. QUINLAN in the Chair.

PRESENTATION OF CASES.

Dr. T. J. Harris presented a case of a child with:

Neoplasm of the Larynx Causing Stenosis. Tracheotomy, Thyrotomy, Intubation.

Dr. HARRIS. Mr. Chairman and gentlemen: I wished to present this patient for the inspection of the Section, and in connection with it to refer to another case, and then to the histories of two others—all four cases of the stenosis of the larynx in children which I have had the fortune or misfortune to see in the last few months. These cases are very difficult to treat, and require a great deal of patience.

The *First Case* to which I will refer briefly was a case of post-diphtheritic stenosis. This case, which I was so unfortunate as to lose, was referred to our service at the Manhattan Eye and Ear Hospital from a hospital in Brooklyn, where an intubation had been performed. The child had worn her tube for some time, but as soon as the house-surgeon there attempted to remove it she showed signs of suffocation. Following Dr. John Rogers's advice, I refrained from removing the tube for some six weeks to two months, allowing it to remain undisturbed. At the end of that time we removed the tube and immediately the child became cyanosed. We made a hasty and rapid attempt to re-intubate, not taking more than a minute, and then resorted to tracheotomy, but even the brief period of time which this required proved too late and the child died. The lesson that I learned from that was that it is not wise to do anything in a case of laryngeal stenosis without first opening the trachea.

The *Second Case,* which is also of considerable interest and was in the service of my colleague, Dr. McCullyh, who was called upon to do a tracheotomy for stenosis. The child, aged 3, was much pressed for breath. She wore the tube for about three weeks. At the end of that time when we examined the larynx under chloroform

for the neoplasm, which had been located by the finger, it had entirely disappeared; there was nothing to be discovered whatever. It was Dr. McCullyh's impression that in fitting the tube a cyst in the epiglottis had been ruptured, and that by the time the three weeks had elapsed the stenosis had cleared up. The removal of the tube was followed by no unpleasant symptoms, and the child was discharged well.

The *Third Case* is the patient before you. The child was admitted to the hospital last June, suffering great difficulty in breathing, and a tracheotomy was hastily performed by our house surgeon. Before coming to us the child had been in the children's wards of the Post-Graduate Hospital for a number of weeks—admitted there I should judge for a slight difficulty in breathing. At that time the attending surgeon there operated for adenoids, and the house surgeon told me that the child had been discharged with no difficulty whatever in breathing. Shortly afterward, however, when it came to us, she was suffering great dyspnoea and tracheotomy was performed at once by our house surgeon, as stated. The child's throat was very tolerant, and I was able to get a view of the larynx and a view of a distinct neoplasm. I removed a piece of it for examination by the pathologist, who pronounced it angiomatous fibroma. This excluded the possibility of a curative tracheotomy, and although the child had a great deal of discharge from the tracheotomy wound, at the end of two months I determined to resort to thyrotomy. This was performed and the fibroma was found attached anteriorly to the thyroid cartilage, and removed. The child was sent back to the wards, and as was anticipated, infection took place in the new wound from the amount of secretion in the tracheal wound, and we had to allow the wound to heal over by granulation. The child, however, did very well at the time, and when I returned from my vacation in the fall, Dr. Rodgers and myself dilated the larynx and introduced a large intubation tube such as he has recommended, making at the same time arrangements for a T tube such as has been devised to secure retention. In the meantime, however, the little girl coughed up her tube and the house surgeon had to do a second tracheotomy, the child being pulseless and breathless, and none of the house staff thought that the child could be saved. Only last week did I again make the attempt with Dr. Rodger's help to introduce the T tube, which she is now wearing. As you know, it will be necessary for her to wear this a considerable length of time, but it will now be possible for her to return home. There was considerable reaction at its introduction, but she recovered quickly and we shall soon be able to discharge her. I thought that those of you who are not

acquainted with this form of tube might be interested to see the form of the T, the trachea in this case being so small that two little clamps were used instead of the Rodgers' screw piece. The manipulation is most delicate and the difficulties of properly linking it are not at all small, and yet we feel very sure that we are not going to have the difficulty which before occurred when the tube was removed. It will be perfectly safe. So far as I have known there has been no other case reported of fibroma of the larynx in so small a child. Some years ago Dr. Coolridge of Boston reported a similar case, but in an older person.

The *Fourth Case* is this little boy—*thyrotomy for stenosis of the larynx following diphtheria.* This child was under Dr. Duel's care two years ago, who performed the operation. It is a post diphtheritic case where the child had worn a tracheotomy tube for an indefinite time and it seemed impossible for him ever to get along without one. This child has greatly improved in his breathing, but if you examine him you will find a considerable amount of cicatrical thickening in the anterior wall of the trachea and some thickening posteriorly, but that has existed ever since the operation and is nothing new. The child came in a few days ago because he was having some difficulty from a cough.

These cases have presented some of the greatest difficulties that we have to meet with in laryngeal work.

Syphilitic Tracheal Stenosis.—By Dr. Lee Maidment Hurd. (Published on page 114 in this issue of The Laryngoscope.)

Growth in the Larynx Existing for Nine Years.—By Dr. J. W. Gleitsmann.

Dr. Gleitsmann. The patient has been seen by some of you before, and the case was reported in 1895. It is a very rare case, as is proved by its frequent reference in text-books and observations of authors on similar growths. The patient was presented to this section nine years ago by some gentleman whose name I do not remember, but who was connected with the Mt. Sinai Infirmary. Four or five months after that I saw him in the German Dispensary. The growth then had the appearance as if the ventricle of Morgagni was packed with a piece of white cotton. The picture in the reprint which I hand you represents it very well. It was drawn by Cave Heitzman. The report was that it was a papilloma durum, but that the growth might later become malignant. The patient disappeared from observation at that time, declining any further interference,

and came back only a few weeks ago. The appearance of the growth at this time is somewhat different from what it was nine years ago. It was then homogenous in character, with a slightly corrugated surface. When I saw it two weeks ago it filled the entire ventricle of Morgagni, but its surface was uneven, beset with little nodules, and parts of it were more hyperaemic than others. I removed about two-thirds of it with the same instrument used nine years ago, viz. the Landgraff double curette, but left the portion lying in the anterior commissure, which, being perfectly white, has been plainly seen by a number of you when examining the patient. When operating I found the posterior parts of the growth more succulent, softer, and easier to cut than the anterior ones, and great care had to be exercised not to violate the vocal cords with the curette, as its lower branch had to grasp the growth on its inferior surface, where it could not be seen. Fortunately, I did not injure the cord, which was confirmed by a gentleman at today's examination. The report of Dr. Louis Heitzmann is recurrent papilloma durum with some suspicious features on isolated places.

Primary Lupus of the Larynx.—Presented by Dr. H. E. Smyth, of Bridgeport, Conn.

Dr. Smyth. Mr. Chairman and fellows of the Section: There is little which I desire to say concerning this case of primary lupus of the larynx, other than that I regard it as a typical example of a rare affection.

M. R., male, single, farmer, 47 years of age, moderate smoker, He came to me on October 22d, a month ago, complaining of dryness of the throat, his physical condition otherwise being perfect. He stated that for six months he had had an occasional feeling of irritation in his throat. His family and personal histories were negative, as were also the results of examination of the lungs and sputum, and a careful inspection of the entire body revealed no evidence of the disease. Examination of the larynx shows extensive involvement of the epiglottis, to which the disease is confined, cords normal. The swelling exhibits the characteristic nodular, "worm-eaten" appearance of a lupus. The patient has been taking potassium iodide in thirty drop doses for the last month with no beneficial effect. I would like to have suggestions as to treatment and also as to the advisability of operative measures. I have not yet had a piece of the epiglottis examined.

Case I.—Syphilitic Tracheal Stenosis, with Dilation During Active Ulceration.—Presented by Dr. Lee M. Hurd. No discussion.

Case II.—Fibroma of the Larynx Causing Stenosis. Tracheotomy.—Presented by Dr. Harris.

DISCUSSION.

Dr. Emil Mayer. An important point connected with the intubation is that the tube which has been passed around is a modification of the Rodgers' tube, the one used for adults having a hole into which a rectangular piece is secured. This, with its encircling band of brass, is quite a different sort of thing, and it may be well not to confound the two, in using these tubes. It is almost imposible to find the air opening opposite the tracheal wound in any tube at hand, and the only thing to do is to intubate and introduce a heated metal probe through the tracheotomy wound and scratch the external orifice of the gutta percha tube, and then have the hole made to fit at that point. The interesting point is the ability of the child to swallow with the tube in this position.

Another question is whether it is well to let children go for a length of time without taking out the tube and cleansing it. In this instance I think it better to take the tube out and cleanse it, and have the child remain for a fortnight before discharging it.

Another important point is that tracheotomy is indicated first in such cases. In a case that I have recorded of post-typhoid perichondritis, tracheotomy was first done, and some months after, when the inflammation had gone down, intubation was successfully performed.

Dr. Beaman Douglas. I would like to call attention to the point that Dr. Harris has made, that a preliminary tracheotomy should be performed in all cases of removal of the intubation tube where difficulty had previously been experienced whenever the tube had been taken away. If this were accepted without qualification, it might lead to erroneous practice for when laryngeal stenosis is produced by oedema following extubation it can be controlled by packing the neck in ice, and it is rarely necessary to perform tracheotomy. In cases where the stenosis is fibrous in character a preliminary tracheotomy is a useful and proper procedure.

Dr. Harris. I wish to add that the procedure which has been indicated by Dr. Mayer was the procedure which we adopted in the fibroma case, but failed to so state in my hurried description. Indeed,

there does not seem to have been any method which could have been found successful other than this careful preliminary marking on the tube. Mr. Ermold has made these tubes, and requires a week or ten days to prepare the proper size, so that during that time it would be well for the patient to wear some form of tracheal plug, unless you have a house surgeon ready to act, as was done in my case. Dr. Douglass' point I appreciate, but I feel that in the case I lost there would have been no death to report if I had made a preliminary tracheotomy, and that seems to have been the judgment of Dr. Rodgers, who has had large experience in such cases.

The CHAIRMAN. This is certainly a case of unusual interest, and ought to provoke some discussion.

Case III.—Growth of the Larynx of Nine Years' Standing.—Presented by DR. GLEITSMANN.

Dr. FREUDENTHAL. I remember very well having seen this case nine years ago, and what is left of the growth now seems to be identically the same sort of mass that was then present. I can only say that it is very unusual. What struck me was that the right cord did not move as freely as the left one. Perhaps there is some malignancy in this case, after all. We cannot always depend upon the findings of the microscope, because we have all had evidence that mistakes are made.

Dr. GLEITSMAN added that the authors agree that laryngeal growths of white color are always suspicious as to their malignancy, but that the long duration and microscopic report in this case proved its benign character.

Case IV.—Primary Lupus of the Larynx.—Presented by DR. H. E. SMYTH.

DISCUSSION.

Dr. EMIL MAYER. I do not question the diagnosis of primary lupus of the larynx in this case. In arriving at this conclusion we must exclude syphilis, tuberculosis or malignant disease. There is absolutely no evidence of syphilis; tuberculosis at this stage would be indicated by quantities of bacilli and many other symptoms; and malignant diseases may be excluded by the clinical picture. Microscopical examination would certainly clear up any doubt. I should look for a report of very few tubercle bacilli. Regarding treatment: I would not advise anti-syphilitic treatment, it being more likely to do harm than good. His physical condition is very good; he has no complaints and his chances of living are probably as good as any one

for the next fifteen years or so. Hence I should look after the general health only. Two cases that I had the privilege of seeing lived for fifteen and eighteen years respectively, when general tuberculosis eventuated. One additional diagnostic feature of these cases is the absence of symptoms of discomfort in the larynx, although the lesions are so great.

Dr. GLEITSMAN. I would like to call attention to Dr. Stern's new tubes combining X-rays and high frequency current, and the probable beneficial effect of such rays on lupus in the larynx.

Dr. BEAMAN DOUGLAS. I have seen two cases of lupus in the last two years, one of seven and the other of five years' standing, in which the diagnosis was made clinically and confirmed microscopically. The case which Dr. Smyth has so kindly brought for examination presents all the clinical features of a lupus, and I believe it is a lupus, but were it my case I should at once proceed to take a piece from the epiglottis for the purpose of microscopic examination, for if it should be the slow form of epithelioma, such as we sometimes see in the region, the treatment would be radically different. The diagnosis can be easily made by any pathologist.

Demonstration of the Value of Radiographs in Frontal Sinus Disease.—BY DR. F. C. ARD.

Dr. ARD told how in visiting Professor Killian's clinic during the summer he had been impressed with the use he made of radiograph pictures in cases of suspected frontal sinus disease, as he had never seen anything of the kind before. Professor Killian referred him to Professor Goldman, where most of this work was done, much of it being performed by a young nurse who had developed a special facility along this line. It was an obvious advantage to have a picture of the cavity to be operated, or even to be sure that there was a cavity. Since his return Dr. Ard had given considerable attention to the matter, and he showed some very interesting pictures as the result of his efforts. These radiographs were also useful in brain work, in locating tumors, etc.

Dr. BEAMAN DOUGLAS submitted a radiograph of a chest which corroborated the diagnosis in a man suffering from paralysis of the left vocal cord. All causes for it were excluded excepting chest causes. Dr. Judd had made an exposure, and it was beautiful to see the pulsation of the large aneurism in the chest. The heart is distinctly outlined, and a large shadow above the heart is undoubtedly an aneurism pressing on the left recurrent nerve. The man also has compression of the left lung.

DISCUSSION.

Dr. MYLES remarked that in doing one of the extensive Killian operations it would undoubtedly be a great advantage to know clearly the localities of the different sinuses before operating.

Dr. ARD, in response to a query as to how the picture had been taken, said that he being the subject of the picture could not see very much. He had been laid back on the table and a round tube had been placed against his head, about eight or ten inches in length. The plate underneath.

Dr. MAYER asked Dr. Ard where the plate was put when he was radiographed, and the latter responded that it was placed directly under his forehead so that his weight was on the plate. The speaker than called attention to an ingenious table, devised by Dr. W. M. Brickner, the radiographist to Mt. Sinai Hospital, by which the plate was placed under the table top, and the patient was never in contact with the plate. This prevented the plate from breaking or sliding, and a very clear picture resulted.

Dr. Mayer had made some X-ray examinations at Mt. Sinai Hospital this year, mainly, however, for the study of the maxillary antrum. These were not at all convincing.

Dr. WILSON said that the gentleman who did the X-ray work for the hospital with which he is connected told him that when a cavity contains pus it was the pus which clouded the cavity, and not the thick tissue. This is also shown in pictures of the heart. You see the heart very distinctly because of the blood in the heart. It is not the condition of the wall, but the fluid itself that obscures the light.

EXHIBITION OF INSTRUMENTS.

Sams' Atomizer:

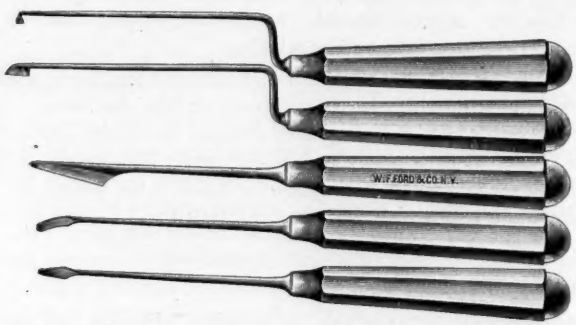
Dr. ABRAHAM demonstrated an atomizer which he had received from the agents about a month ago, and which he had given a

thorough trial and found to be compact and practical and entirely satisfactory in every respect. It is made somewhat on the order

of a French perfumer, but has no valve and can be used with one hand. The air passes through a piston. There are no hard or soft rubber parts, and it is constructed entirely of metal, except the bottle. Therefore it can be sterilized and is thoroughly aseptic, and can be used for either oily or watery solutions.

Set of Septal Elevators and Knives:

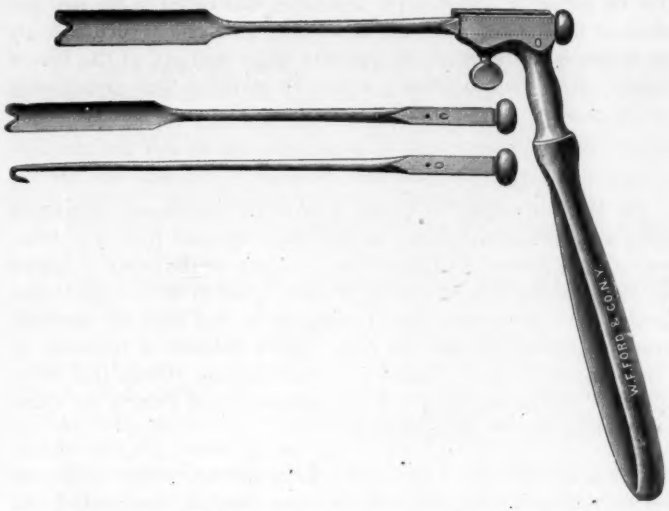
Dr. ABRAHAM presented a set of three knives and two elevators, devised especially for performing the sub-perichondrium et osteal operation. With the aid of a diagram drawn upon the blackboard he demonstrated the technique of the operation, which is performed entirely upon the convex or deviated side of the septum. With the hoe-shaped rectangular knife, a posterior vertical incision is made, just behind the thickened and deviated portion of the septum; then, with the small, straight knife a longitudinal incision is made at the lowest angle of the deviation, beginning posteriorly and carried forward to the anterior angle of the deviation, and then curved upward, along the front of the deviation, making a U-shaped incision



through the mucous membrane and perichondrium, which structures are elevated with the spade-shaped elevator, by pushing upward and backward from the anterior inferior angle of this incision, and held out of the field of operation by a piece of aseptic gauze. Now with the triangular or wedge-shaped cartilage knife, he removes the thickened and deviated portion of the septum, inserting it below the antero-inferior angle, and with a sawing movement removes the major portion of the thickened and deviated septum, being careful not to go too deep, so as to perforate the concave side. Then he removes all uneven surfaces with the same knife. The small triangular elevator he finds of value in some cases, but this operation can be performed without it.

Voislawsky-Hajek Chisels—Nasal Plugs:

Dr. ABRAHAM then presented a set of Voislawsky-Hajek chisels, for the removal of bone, and said that he found them of great value.



He also demonstrated a nasal splint made out of soft gauze covered with soft gutta percha tissue, which he made in the office to fit the individual case and used in the after treatment.

Set of Nasal Splints.—Presented by DR. LEE M. HURD.

These splints are placed along the floor of the nose until the bulge at the anterior extremity of the splints fits against the anterior end of the inferior turbinate and only the wing projects into the vestibule of the nose along the septum. They stay in place and do not cause granulations to form in the vestibule like other splints, and they are more comfortable to wear.

Septum Forceps:

Dr. PAYNE presented a pair of Septum Forceps for straightening the septum under cocaine. He had used it very successfully in five cases. The operation took about ten seconds. There was quite a little pain but it was for a very short time, and the patients did not seem to mind. After the operation a splint was put in and remained for about a week.

Laryngeal Curette:

Dr. J. E. NEWCOMB exhibited a pair of curettes devised by Dr. Luc of Paris for the removal of sessile growths from the larynx. There were four in the set, one for each side, one for the anterior and one for the posterior commissure. Attention was called to the size and shape of the handle, which was attached to the shank at such an angle as to enable the hand of the operator to be well out of the line of vision. With these curettes it is possible to watch their engagement of the growths and to easily remove them.

DISCUSSION.

Dr. W. F. CHAPPELL. I have a set of Dr. Abraham's knives and have used them satisfactorily in two cases, my after treatment, however, differs from that suggested by the reader of the paper. I cannot see the necessity for introducing a nasal splint in all of these cases. In the two I have mentioned, I replaced the flap after the cartilage was removed and treated the edges with a solution of Iodoform in Tinct. benzoin co. I dusted into this Squibbs' Compound alum powder. Both cases healed by first intention, and I think the splint would have been a disadvantange.

Dr. T. P. BERENS. I have been doing submucous operations for upwards of ten years, and thus far have found a small scalpel and a pair of Weir's nasal cutting forceps all sufficient. While the instruments shown are admirably adapted to their purpose I fail to appreciate their necessity.

Dr. MYLES. This is undoubtedly "the coming operation." I think it would be timely if we could limit ourselves to a discussion of septal instruments intended for the submucous operation. I have more than forty, most of them made specially for this operation. Ten or fifteen were made by the White Dental Company and there is one which I consider very important, devised by an Englishman. A small knife with two oval tipped prongs, to be used for severing the cartilage, the main idea is to prevent excessive tramatism when doing an extensive operation. When discussing the Asch operation, many speak of the operation on the bone, but the Asch is a cartilage and not a bone operation. In removing the bone in the sub-mucous operation, of course one must have some form of biting forceps, but those that are large enough to be always efficient are too large to use without obstructing the field of vision. This necessitates the use of chisels and trephines in some cases. The removal of the

entire thickness of cartilage is not objectionable. I have been doing it for ten years and have never had a perforation. The more I operate the better I like the proceedure.

Bony Growths in the Tonsil—Paper read by DR. W. W. CARTER.

ABSTRACT.

The author said that bone originating in the tonsil itself was of no great importance to the clinician, as no special symptoms seem to result from its presence and it has always been discovered by accident, but that to the pathologist it was a matter of absorbing interest and that much ingenuity had been expended in trying to account for it. Two theories have been advanced:

1. That it is due to developmental changes in remains of the second branchial arch.

2. That it is produced by metaplastic changes in the connective tissue of the organs.

Each theory has about an equal number of adherents.

He cited a case coming under his own observation, a woman of 22 who had applied for treatment on account of repeated attacks of tonsilities, but who was in other respects perfectly healthy. During the last ten years she has had as many as a dozen peritonsillar abscesses, most of them on the left side. Even between attacks her throat never felt well, each swallow of solid food being attended by a certain amount of discomfort in the tonsillar region, but on neither side in particular. Examination showed no signs of acute inflammation. The tonsils appeared as dense fibrous matter, slightly larger than normal and firmly adherent to the pillars. The right mass was removed with the tonsil punch with no unusual incident, but when the left was approached it was found to contain a solid mass of such shape that it could not easily be included in the grasp of the instrument. On placing a probe against the tonsil it was found to be freely movable and not attached to the bony skeleton. After cocainizing the throat he engaged a tenaculum in the upper extremity of the mass, lifted it from its bed and dissected it out from above downward with a pair of scissors. The specimen was about three-fourths inches in length, one-half inch wide and one-fourth inch thick. Its gross appearance was that of fibroid tonsillar tissue, and its center was a solid mass reaching almost from one end to the other.

Microscopical examination of a section through the entire specimen shows it to be made up largely of fibrous and bony tissue, with a very small amount of lymphoid tissue in it. In the stroma of the

organ are a large number of areas of hyaline cartilage, some of which are plainly being transformed into well organized bone containing Howship's lacunae and lined with osteoblasts and osteoclasts. There are some fat cells associated with the areas of bone-formation. In some areas the bone is being formed directly from fibrous tissue, which at that spot has become as dense as ordinary periosteum, while in others the transitional stages from fibrous tissue through cartilage to bone can be observed. There is therefore plain evidence of the active formation of bone and cartilage from the stroma of an adult tonsil, and Dr. Wright, the pathologist who examined the specimen, thinks it problematical as to whether or not the process could have begun in embryonic life.

The writer then quoted instances reported by Reitzmann, Walsham, Wingrave, His, Orth, Deichert and Ruckert, who incline to believe that the bone is due to developmental changes from embryonic conditions. Among those who believe that the bone arises from fibrous tissue are Virchow and Kanthack. Nösske attributes it to inflammation, retrogressive changes and a local predisposition to the formation of bone. Lubarsch concludes (1) that bone frequently occurs in the lymph nodes of tuberculous subjects; (2) that bone arises from a metaplasis of connective tissue around tubercular cheesy masses, and that a predisposing cause is the deposit of calcareous salts; (3) that cartilage and bone are derived partly from deposits during foetal life, and partly from metaplastic changes in inflamed tissue.

In the case under consideration the writer felt that there certainly could be no connection between the deposit of calcareous salts in and around tubercular foci and the process of active bone and cartilage formation therein exhibited. In considering the origin of the bone it is well to remember the mode of development o fthe tonsil.

From the study of his own case and of the cases reported by others the author is inclined to believe that the bone originates from metaplastic changes in the connective tissue, and not from the branchial arch, for the following reasons:

1. At the time the tonsil develops the branchial arch has disappeared.

2. If the bone came from the arch it should be uniformly distributed through the organ and not confined, as it usually is, to the connective tissue.

3. The natural sequence of development of osteomata is from connective tissue, through cartilage to bone. This process is clearly shown in the specimen from the case under consideration.

4. Analogy with other organs shows that cartilage and bone are frequently found in the connective tissue framework of such glands as the parotid, the mammary gland, and the testis, when these have been subject to chronic inflammations.

But since bone does not develop in every tonsil that has been subject to proliferation connective tissue changes, we may assume when it does occur some local predisposing tendency to its formation.

DISCUSSION OF DR. CARTER'S PAPER.

Dr. J. E. NEWCOMB said that he had been much interested in the subject of Dr. Carter's paper and had recently brought the matter up before the American Laryngological Association, reporting a case and discussing the mode of origin of the bony masses. Dr. Carter's case was unique as to the size of the fragment, for so far as the speaker knew no case of this size had previously been reported. He could not speak as to pathologists, but thought that in this instance we had to do with the metamorphosis of connective tissue into bone, and that the mass was not a vestigial rest of a branchial arch. We can never be positive as to mode of origin, for positive proof is not forthcoming. Each pathologist reasons from the cases coming under his own observation, and the weight of evidence shifts from side to side as new cases come up. Generally the nature of the substance found in the tonsil has been indeterminable on gross inspection, but under the microscope bone has been found sometimes and sometimes cartilage. Calcareous deposits may be the sequel of latent tonsillar tubercle, for such tubercle rarely undergoes cheesy degeneration. It may well be that this tubercular process comes to an end through the deposition of lime salts.

Dr. BEAMAN DOUGLAS. This is a subject which interests me very much indeed from a pathological standpoint. I have examined the specimen which Dr. Carter exhibits, and in some ways it is a remarkable one. There is undoubtedly a quantity of bone in the specimen, in fact, an unusual quantity, so that we might assume that this bone was not formed at all within the tonsil tissue, but had become imbedded in it, where in the course of time fibrous tissue changes occurred in the region of the bone in an attempt by nature to surround the foreign body with a connective tissue formation. This assumption is more or less corroborated by the size of the bone, as well as by the quantity of fibrous tissue present, and by the absence of lymphoid structure in the specimen under examination. The lymphoid tissue is wholly absent except at the borders of the specimen.

Secondly, we might assume that this bone had been formed within the tonsil itself as a result of chronic inflammatory processes, or in other words, as a form of fibrous tissue degeneration. This view could be more easily accepted if the bone were not so regularly formed and did not present so much the appearance of healthy adult bone. Had it been the result of fibrous tissue degeneration there undoubtedly would have been present a large quantity of calcareous material, which is absent in the specimen. It is not clear to my mind how such well-organized bone could have resulted from degeneration of connective tissue.

The third way in which it might have been formed is as the result of embryological disturbances. This, of course, is a plausible explanation of the presence of the bony tissue, but it does not explain the fibrous tissue which surrounds the bone. The writer of the paper has so thoroughly discussed this point that I will not refer to it further.

The most rational explanation of the bone in the tonsil is that it is there in the nature of a tumor. This would explain both the presence of the bone and the fibrous tissue which we see. I therefore believe that this bone within the tonsil is either a foreign body embedded there, or it is a tumor formation within the tonsil.

Chronic Laryngitis as Treated by the General Practitioner—J. T. PRATT—*The Medical Age*, Aug., 1904.

The inhalation of the various essential oils used in chronic laryngitis may, in those cases where steam is not serviceable, be performed by the dry method. A Marlindale ozonic inhaler may be used for this purpose.

The insufflation of finely ground matico leaves, as an astringent, is of special service in the early stages. The dried and impalpable alum powder is superior in that it is soluble in the secretions. Where the patient is to insufflate himself the suggestion of MacDonald may be followed by inspiring through the short tube of a small wash-bottle containing the desired powder. Recognition of constitutional causes must not be neglected in the treatment, as well as the correction in the use of the voice. STEIN.

THE AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY.

(Formerly the Western Ophthalmologic and Oto-Laryngologic Association.)

SECTION ON OTO-LARYNGOLOGY.

Ninth Annual Meeting, Denver, Col., August 24-25-26, 1904.

DR. W. L. BALLENGER (Chicago), President.

DR. D. T. VAIL (Cincinnati), Secretary.

Experiments with Radium in Some Nose, Throat and Ear Diseases.—BY DR. JOSEPH C. BECK, Chicago, Ill.

See THE LARYNGOSCOPE, *December, 1904, Page 897.*

(*Continued from page 96.*)

DISCUSSION.

Dr. A. H. ANDREWS (Chicago). I want to commend Dr. Beck for the scientific work he is doing on this line. That radium has therapeutic properties is not disputed, but just what application can be made of these properties is still a question. I am very glad that Dr. Beck is taking the time and trouble to experiment and to report on his experiments, and that he is not so enthusiastic that his reports will be biased. I think he deserves the thanks of this society for the work he is doing and the reports he is making.

Dr. BECK (closing discussion). I will pass around this little bit of radium in a lead case, and you will see it is no wonder that the patient should be surprised that this put in the nose should do good. If the radium was not kept in this lead box when carrying it about in the pocket it would produce a burn that would heal slowly and produce the same changes as an X-Ray burn. The reason it should be preferred to the X-Ray is that we cannot put the X-Ray tube into the cavities we are treating. The skin men can use X-Ray better. You can put the high frequency apparatus into the nose, and that is the next best thing we have. We must accept radio-therapy, because it has great power. You will hear from it more and more, and I promise to report to this society at the end of another year my experiences with radium. The way I used radium in the case of ozena was with the head hanging down, over the edge of the

table. I allowed the tube to remain from five minutes to a half hour. Radium is an absolute analgesic. It will stop pain, no matter where it is, provided you can get it in contact with the tissues. Its rays do not travel far. The Beta ray has only skin depth action. The Gamma ray goes through nine thicknesses of marble 1¼ inches thick, and if we had enough of these rays we could get better results. The Beta is the one to depend upon. Radium is quite expensive—50 milligrams cost $100.00.

In cases of ear troubles I attach the glass tube containing the radium to a flexible probe like this and pass it down to the tympanic membranes and if a perforation is present large enough, directly into the middle ear. I may add that I have experimented in eye cases but am not ready to report at this time. Suffice it to say, however, that I have observed no wonderful results, but sufficient to encourage me to go ahead and experiment further.

The Etiology and Diagnosis of Acute Non-Suppurative Otitis Media.—By Dr. Wm. C. Bane, Denver.

See The Laryngoscope, *September, 1904, Page 657.*

The Treatment of Acute Non-Suppurative Otitis Media.—By Dr. Edwin Pynchon, Chicago.

See The Laryngoscope, *September, 1904, Page 661.*

DISCUSSION ON PAPERS OF DRS. W. C. BANE AND EDWIN PYNCHON.

Dr. J. M. Foster (Denver). I feel this academy is to be congratulated on the selection of this subject for a symposium. These patients are so depressed and discouraged that we are often at our wit's end to do anything for them after the acute stage has been passed. Appreciating, as we do, the failures in the chronic cases and the marked success in the acute cases, we wonder that the general practitioner has not appreciated the importance of curing middle ear catarrh. It is hard to convince him that it can be cured so easily. Neglect of these cases often leads to serious and fatal consequences. The symptoms of this disease are readily recognized in the adult, but in children it is not so readily done, especially where the drum is but slightly congested and where the auricle is not sensitive to pressure. But even in infants the time is now past when any of us are willing to allow the appearance of the discharge to make the diagnosis for us. There is one variety of acute non-suppurative infection of the middle ear that was not mentioned by the essayist, that is the acute hemorrhagic inflammation which was called to my attention some years ago by Dr. Roosa. The symptoms

are all severe and are shortly followed by perforation of the drum and a discharge of blood. This in turn is followed by prompt healing of the affection as quickly as it came on. I thank Dr. Pynchon for suggesting this inter-tympanic hot air douche. Its use must be limited to a small number of adult cases as it is impossible to use an Eustachian catheter on most children. I have not had any good results with the use of the Politzer method during the stage of pain and I think that any method that will help these cases should be gladly received. I am somewhat surprised that more stress has not been laid on local blood letting. The results from that are marvelous at times. Early paracentesis is without rival the best plan of treatment in many cases and I had expected more to be said about local anæsthetics in puncturing the drum head. I have been disappointed so frequently in using them that I have gone back to nitrous oxide and ether in most cases. I think it is important to disinfect thoroughly the external auditory canal and Eustachian tube before and after puncture, and it is important to keep it antiseptic. I like this little aseptic package of Dr. Beck's for packing the canal as there is less danger of infection. A great many of these cases which are aseptic when first operated on, are very readily contaminated through handling. In order to make a prognosis in many of these cases it is often necessary to have a bacteriological examination of the discharge, determining thereby if pneumococci or streptococci, etc., are present. I have found the packing of the canal is a better method, after the pain is over, then the wet or dry powder treatment. It is so easy to get too much powder into the ear so that it packs and becomes hard to remove, and syringing injudicially or too long will keep up the discharge indefinitely.

Dr. JOSEPH BECK (Chicago). The recent writings of the students of this subject have been against an early incision of the tympanic membrane in the acute cases. It has been my rule, as the previous speaker mentioned, to make an early incision; but a year ago, after the German Congress of Otologists met, I was convinced I made a mistake in doing so. I think I had many cases of sub-acute and chronic otitis media develop in consequence thereof. I mean that I now wait longer than I used to before resorting to the incision of the membrane, and find that complete resolution often occurs. I believe we see many of the cases in children and call them earache, making the diagnosis. I use carbolic acid drops in the ear to relieve the ear ache. I meet most of the cases of otitis media following influenza, and these cases referred to as hemorrhagic conditions of the drum are those following acute influenza infection in many instances.

When these hemorrhages are present, with the intense pains, knowing that complications in the mastoid will follow, I make an early incision into the drum. In connection with anæsthesia, I have found that menthol, carbolic acid and cocaine in full strength give good results. The operation is not done without pain, but little compared to the anilin oil and cocaine solution which is objectionable on account of toxic action.

Following paracentesis in the cases of acute otitis media following an attack of influenza, we often see develop a protruding mass, looking like granulation tissue, which is known as the tit-like perforation and this is known to markedly interfere with drainage. These acute cases, when they first rupture, or after an incision of the drum membrane, I usually pack and drain with gauze; and when I can not do it my self I intrust my patient's friend or relative to pack the ear, after having them thoroughly instructed how to do it by using my packing outfit, demonstrated to you this morning.

Dr. F. W. Dean (Council Bluffs, Ia.). In these cases it is my habit to treat the nasal passages and pharynx. I also give carbolized glycerine 10% and order it dropped in the ear frequently. This stops the pain and reduces the inflammation to a great extent.

In Dr. Pynchon's printed directions to the patient he suggests the use of the smallest tip of the fountain syringe and warns the patient not to press it against the ear as that would cut off the return flow. If instead of using any of these hard rubber tips he were to use the glass tip of an ordinary medicine dropper he would find that precaution unnecessary.

Dr. S. H. Large (Cleveland, O.). I think the treatment should be divided under two heads, those in which we get a bulging, and those in which we get a congestion. There is only one treatment in bulging, and that is paracentesis. Ethyl chloride as a general anæsthetic is very good in these cases.

The danger of using too much hot water in the external canal is that it tends to soften the tissues, and if the middle ear becomes infected when your drum ruptures you get a general diffuse suppuration of the external canal.

Dr. A. H. Andrews (Chicago). In speaking of the etiology of these cases, it seems to me that the most important thing before instituting treatment is to try to decide whether it is a case of catarrhal otitis or a case of purulent otitis. I believe they are two separate varieties, one due to pyogenic micro-organisms, the other of the catarrhal type. It is possible to have a vaso-motor disturbance of the blood vessels of the middle ear, bringing about a pouring out of

fluid which produces pressure and pain and will perforate and may later become purulent by secondary infection. The druggists throughout our country prescribe more often for acute otitis than the specialists. The people go to the drug store rather than to the doctor for something to cure ear ache. We should do what is in our power to convince the public of the fallacy of such a procedure. With regard to the treatment, it is not always easy to differentiate between these two classes of cases. There are cases between the two extremes. Th cases coming during measles or scarlet fever or late in influenza are purulent. Those in the course of ordinary rhinitis are more apt to be catarrhal. Otitis media coming early in influenza is amenable to the abortive treatment. If late, it is due to mixed infection, is purulent and apt to be rapidly destructive. The treatment I use is carbolic acid and glycerine on a pencil of cotton, and applied in such a way that the end of the cotton lies in contact with the drum membrane. If not held so by a pledget, the exudate passing through the membrane by osmosis washes away the glycerine and osmosis ceases.

Dr. L. B. Lockard (Denver). Politzer made the statement many years ago that in children a strumous diathesis paracentesis would almost invariably produce suppuration. It will do so much more quickly in that class. I have had a good chance to verify that. Suppuration will occur, no matter what precaution we take. In these cases we should delay paracentesis longer than in children of a normal habit.

Dr. J. A. Donovan (Butte, Mont.). I started to write a paper for the Montana Medical Society, which will be published (Medical News, Sept. 17, 1904), for which I apologize to Dr. Pynchon. I started with the intention of advocating the early free incision in all cases that did not subside in 24 or 36 hours. I read a paper by E. H. Hazen advocating the catheter. Before completing my paper I had eight cases in succession in only one of which I had to make the incision, and I changed my paper before reading it to recommending the catheter and air hot as can be borne used continuously three to five minutes. In early stages, hot water with a return flow douche is the best thing we have to relieve the congestion, and after using it twenty minutes to an hour, I advise the patient to dry the ear with cotton and then put in the carbolized glycerine.

Dr. G. W. Spohn (Elkhart, Ind.). There is very little stress put upon the general treatment in these two papers, which cover the ground very thoroughly otherwise. I cannot see how Dr. Pynchon could go wrong, because he covers the field so thoroughly, but I

believe we should all give more attention to the internal treatment than is stated here. Otitis media is generally due to troubles in the post nasal cavity and I believe we should treat the nose throughout at the same time we are treating the ear. Dr. Donovan does a paracentesis in 24 or 36 hours in a certain class of cases. I agree with him; but if we get a free catharsis with sulphate of magnesia, we will get results more quickly than we would otherwise. I had a few cases in the past year where I did the paracentesis in 24 hours for bulging, and the result was the discharge ceased in 48 to 72 hours. In the opposite ear of the same patients I did a paracentesis four or five days after that. It was three to four weeks before the discharge could be stopped, showing that an early paracentesis is necessary. I used the dry treatment in both cases. I believe that a great many of these cases are overtreated, and if more attention is given to the medicine internally and to the nasal treatment, we will get better results.

Dr. DUDLEY S. REYNOLDS. I wish to emphasize the statement by the last speaker in regard to internal treatment. I wanted to hear somebody call attention to the value of revulsion. I often use this; one grain calomel, half grain podophyllum and three grains bicarbonate of sodium, followed in two hours by ten grains salicylate of sodium in camphor water diluted with a large tumblerful of drinking water.

The salicylate of sodium may be repeated every half hour until pain ceases. In cases where bulging occurs, my practice is to mop out the external canal with camphophenique. There is mentioned in the U. S. Dispensatory camphorated phenol, but the preparations are different. That which I use is composed of equal parts of crystalized carbolic acid, and gum camphor rubbed together until liquified. It must not be diluted, or applied to a wet surface.

Dr. H. W. LOEB (St. Louis). I would add one hint as to the relief of pain; the use of aspirin. It is a compound of the salicylic type and will relieve pain, given in large doses of ten grains, repeated in half hour or hour if necessary.

Dr. PYNCHON (closing discussion). Dr. Foster spoke about the symptoms in children being different from those in adults. This was touched upon in my paper, but was omitted in the reading. The reason the anæsthetic spoken of is not effective is that it is improperly applied. The way to apply the mixture is to first clean out the canal, preferably with a little peroxide of hydrogen and next dry with hot air. Then a small quantity of the anæsthetic should be put on cot-

ton and allowed to remain against the drumhead for a sufficient time. Five or ten minutes are not sufficient but about twenty minutes will be required to give anæsthesia. I also touched on influenza in the part of my paper omitted. I have been using hot douches in the way I have recommended for the past ten years without bad results. In reply to Dr. Spohn, I will say this is an extensive subject and I could not touch upon everything, but only on those things which seemed to be most important, leaving it to the discretion of the attending physician to follow out general treatment as indicated. (Dr. Pynchon showed a little instrument for use at the bedside when inflation is required, being much smaller than the usual Politzer hand bag.)

The Diagnosis and Differentiation of Chronic Non-Suppurative Otitis Media.—By Dr. Wm. Lincoln Ballenger.

See The Laryngoscope, *September, 1904, Page 669.*

The Treatment of Chronic Non-Suppurative Otitis Media.—By Dr. M. A. Goldstein.

See The Laryngoscope, *September, 1904, Page 675.*

DISCUSSION ON PAPERS OF DRS. W. L. BALLENGER AND M. A. GOLDSTEIN.

Dr. W. Sohier Bryant (New York). The authors of these papers deserve much praise for the way in which they have handled this most difficult subject. Dr. Ballenger in his classification certainly covers all cases, but possibly owing to the great importance which diagnosis holds in reference to the treatment of these cases, a little finer division than was given would be useful. Because under the head of chronic non-suppurative otitis media, especially in the adhesive division, a great variety of different conditions exist, among them calcification, atrophy, hypertrophy and adhesions proper, besides the faulty conditions of the Eustachian tube which are chiefly vascular, each requires a different method of treatment. Undoubtedly most of the treatment is empirical, but we cannot afford to lose any rational means we may possess because of the extreme obstinacy of these conditions.

Dr. Goldstein's system is certainly very complete, and covers all the newest things in this line. My own treatment is confined primarily to the Eustachian tube, and as soon as this has been attended to to the best of my ability, then the structures within the drum receive attention. The Eustachian tube, it seems to me, should be made patulous, and after that Nature does much to improve the con-

dition of the ear. Adhesions can be stretched by inflations and massage. In treatment of the Eustachian tube I have found the best results followed the use of adrenalin or some preparation of the suprarenal gland, followed by a counter irritant applied to the mouth of the tube and its neighborhood. The best agent has appeared to be Monsel's solution of the per sulphide of iron, or nitrate of silver After the tube is sufficiently patulous to allow the passage of air during deglutition, the next thing to do is to improve any adhesive condition that may be present. In order to do this, irritating injections are often useful. Occasionally exceedingly favorable results follow a mild intercurrent acute otitis media, as in the case Dr. Reynolds told me of yesterday, and in a case of my own, where excellent hearing resulted in a case of long standing deafness. The treatment of secretory cases is easy and satisfactory. All that is needed is a patulous tube and the ear will drain itself. Constitutional treatment is most important in all cases, and gives good results if undertaken in the early stages of the disease, but the patient must be warned not to desist too soon. In the third division of Dr. Ballenger's classification the diagnosis is a little obscure, not to say difficult in the early stages of the condition. Many cases which might be classified in this group will recover after treatment directed against the adhesive condition. For this reason it seems to be good practice to treat all cases that fall under group three for adhesive disturbances, and give the patient the benefit of the doubt until trial has demonstrated the futility of the treatment, for the majority of these cases can be improved. I have seen many cases where the stapes has been removed, one especially in Dr. F. L. Jack's clinic showed very good results, the hearing being very much improved; but the improvement gradually decreased but did not entirely disappear. In the majority of the cases there were no good results.

Dr. E. Pynchon (Chicago). We certainly are to be congratulated on having had two such valuable papers. I can not add anything to Dr. Ballenger's paper in his elaborate consideration of the subject with which his paper dealt. As regards treatment, Dr. Goldstein suggested hand massage in certain cases wherein there is a marked condition of drum head thickening and spoke in favor of hand massage in preference to mechanical massage. In my paper published some time ago I have taken the same ground and recommended Dr. Bishop's pneumatic hand masseur. While Dr. Ballenger has given those many nice differentiations, the fact is that most cases as met with are mixed and not distinct, the Eustachian tube as well as the middle ear being almost invariably affected, and the hearing alter-

nately better and worse. The condition of the mucous membrane in the tube is generally dependent upon abnormalities in the nose and throat and particularly the condition of semi-obstruction of the nasal passages, wherein the course of the air current is deviated so that it strikes certain points more than it should, being manifested by an increased redness of the nasal mucous membrane. All of these cases right through, if we will only except those cases which are purely and entirely labyrinthal, can be benefited by treating the nose if there is any abnormality present, in which case steps taken to bring the nose to an ideal standard will have a beneficial effect upon the ears.

Dr. S. H. LARGE (Cleveland, O.). I wish to ask Dr. Goldstein if he has had any experience with hot water in these hypertrophied conditions. Dr. Head read an article at Atlantic City on its use and advocated it strongly. I have been using an improvement on Lucæ's instrument called Lester's Electric Pressure Sound. The temporary results in some cases were marked but were not lasting.

Dr. ROBT. LEVY (Denver). The general tone of this discussion, not so much of the papers, gives us hope in these cases. I believe if we will look down into the innermost recesses of our hearts we will not feel as hopeful as we are led to believe by the discussion, and I am glad to have a little stimulation in the direction of doing more than has been done before. We are benefited by this optimistic view. The keynote is our ability to make a proper diagnosis of the variety of middle ear disease with which we are dealing and the fact that the gentlemen discussing have given different classifications, and that every one who writes gives a different classification, should be a warning of the great difficulty we are put to in outlining the particular pathological condition we are called on to deal with. In regard to the treatment of the nose, etc., I have never been able to see why the removal of some intra-nasal or naso-pharyngeal condition would improve the middle ear in which distinct pathological changes have already taken place. How will you produce absorption of adhesions, etc., by treating anything that has been causative? The only benefit is to possibly prevent increase of the difficulty. The importance of this has been established but one should not forget the importance of the treatment of the ear itself.

If a bougie is introduced carefully and properly after inflation it does no harm. The bougie may so wound simply by denuding the epithelium that it will give us immediate trouble if we inflate afterwards. I think this has occurred in the experience of nearly every body, no matter how expert. It is necessary to offer a word of warning against forcible inflation after the use of the bougie.

Dr. H. B. Hitz (Milwaukee). There is one phase of this condition that has not been touched upon to any extent, namely that "laxness" in the membrana tympani, mentioned by Dr. Andrews, which I consider of considerable importance as pointing towards a frequent and probable cause of non-suppurative conditions of the middle ear.

Dr. Levy has mentioned the value of early nasal treatment. I thoroughly concur with his view, particularly if the symptom of laxness of the membrana is demonstrated. Nasal obstruction, means more or less frequent effort at clearing the nose usually by snuffing backward, or violent explosive blowing, leading to alternate rarefaction and compression in the naso-pharynx, and often to violent inflation of the tympanum. This violent inflation, whether by nose blowing or too persistent politzerization tends to promote dilation of the Eustachian tube, which in many instances paves the way for subsequent tubal infection and a consequent stenosis. That this condition of tubal dilatation is frequently true can be demonstrated by using the diagnostic tube, and then by having the patient blow the nose or hawk in the usual fashion, the membrana can be heard to flap back and forth; very gentle politzerization gives the same result. I have had some of those patients in whom this condition was marked, but who then had no deafness, return to me at a later period to be treated for the most obstinate form of non-suppurative middle ear disease. It is also a curious fact that most people affected with hypertrophic rhinitis or nasal obstruction have a habit of swallowing at the moment of wiping the nose, the result being a repetition of the rarefaction in the naso-pharynx before mentioned. This may do no harm in a single instance, but repeated many times a day for months and years, is to my mind a most potent element in the causation of aural disturbance in many many cases. Hence I believe firmly in the early removal of nasal obstruction, as a prophylactic measure, in the beginning of so-called catarrhal deafness.

Regarding the diagnosis of fixation of the stapes, or osteitic process at the round or oval window, one must not fail to recognize the value of the more prolonged negative Rinne for the lower-toned forks, to which, I think Habermann first called attention.

Dr. H. W. Loeb (St. Louis). The treatment of the nose is decidedly indicated when there is a process going on in the nose which operates continuously in the direction of the disease. The main thing is that by removing the obstruction and the process in the nose, we prevent sub-acute and acute inflammations in the nose, which tend to increase the inflammation throughout. That is where the benefit of the treatment of the nose is to be derived, in addition to what can

be derived from treating the process of the disease. I think iodide of potassium is sometimes of service.

Dr. JOSEPH BECK (Chicago). I believe both authors have been very much alike in their description of this condition. The diagnosis is aided by the use of the A. fork. It is a great aid. I wish to speak about the use of the bougie. Until recently I was of the opinion that I passed the bougie almost invariably. I used the salpingoscope, which I described last winter in the Illinois Medical Journal, to control the certainty of having passed the bougie, and found that in many instances the bougie was bent in the osteum tubæ and I believe if Dr. Goldstein and anyone else using bougies will use the salpingoscope, he will find that he does not pass the bougie nearly as often as he believes, and that result from the use of the bougies is more imaginary than real.

Dr. L. C. CLINE (Indianapolis, Ind.). We all recognize that the treatment of the nose and throat is the first thing we must attend to, and the second thing is to clear the system and the alimentary tract. I often give effervescing phosphate of soda, and get gratifying results with patients of the lithæmic type.

Dr. BALLENGER (closing). I have very little to say. Several in discussing the papers have shown hazy ideas as to the differential diagnosis. That is, their understanding is so hazy that in talking they do not make and distinction between the three or more classes. It is not profitable to talk about the treatment of these cases as a whole. Each should be studied by itself, and the treatments should be talked of as separate entities. So I infer that some further study would be of benefit to us. Dr. Bryant was very definite in his differentiation throughout his talk, while some others were less clear. It has been my observation for a few years past that in conversation with otologists we are more lax in our differentiation than we should be in talking about these various types of non-suppurative middle ear diseases. I do not believe we are yet ready to make the fine distinctions Dr. Bryant recommended. The condition he spoke of as relaxation should not be spoken of as a separate disease, but only a phase or complication that occurs in the course of other diseases. I believe there are several types of disease we cannot yet recognize. We can not always say whether it is hypertrophic, hyperæmic, hyperplastic or something else, but we can more roughly classify them so as to answer very well for clinical purposes. At present I am not able to make the finer distinctions, except occasionally. A word in reference to the use of massage; as to the

hand apparatus or the so-called "machine." For the purpose of breaking down adhesions, always use the hand machine, but in those cases in which you wish to change the nutrition of the middle ear, as mentioned by Dr. Pynchon, the machine is of special value. In these cases it is of advantage to use the short stroke and rapid vibrations for five or ten minutes at a time. Venous stasis is thus reduced. This also favors the lymphatic circulation, which supplies the nutrition to the cells. The "machine" is of little value in breaking down adhesions. It is of greater value in hyperæmia, and, perhaps, in hypertrophy when circulating and nutritional changes are needed.

Dr. GOLDSTEIN (closing). My paper presents simply a summary of actual results obtained by the persistent treatment of this class of stubborn cases of simple chronic catarrhal otitis media. My opinions are neither optimistic nor radical, but I maintain that by pegging away at some of these old cases where the differential diagnosis has carefully excluded rarefying and spongifying processes, that very satisfactory results will frequently be obtained.

The operative work on the nose in hypertrophic cases is not undertaken simply for the removal of mechanical obstructions; often when the Eustachian mucosa is affected, beneficial reaction will be obtained by intra-nasal operations. Complaints have been made concerning the bougie, and the ease and frequency with which the mucosa of the Eustachian tract is injured. I have experienced but little difficulty in the manipulation of the whalebone bougie. If the introduction be gentle and if the patient does not experience any direct pain, and if care be taken at the withdrawal of the bougie and the tip examined to see than no blood has been drawn, many of the difficulties complained of will be avoided. The salpingoscope kindly loaned me by Dr. Beck, may give us useful data concerning the pharyngeal end of the Eustachian tube, and may assist us materially in overcoming some of the obstacles in the technique of the bougie.

I have had no experience in the use of hot water, but refer to the extensive monograph of Lermoyez of Paris and Moure of Bordeaux, in their experimental work with hot air applications to the nasal passages.

I would recall to Dr. Cline that I mentioned the lithæmic diathesis in referring to constitutional conditions in my paper.

What Constitutes Proper Nasal Treatment in Chronic Ear Disease.—By Dr. John A. Donovan, Butte, Mont.

See The Laryngoscope, *December, 1904, Page 927.*

DISCUSSION.

Dr. Edwin Pynchon (Chicago). We have all been much entertained by this instructive paper, in which Dr. Donovan follows similar lines to those advanced by Snow, of Syracuse, and Fitzpatrick, of Hartford, in the treatment of ear troubles. The unfavorable bearing of mal-conditions of the nose upon the ear is partially from the systemic effect through the intestinal and pulmonary tracts. As I remarked this morning, the nasal mucous membrane, if in a perfect condition, should be of that pink color seen in the roof of the mouth, and if it is more red than it should be, there is generally a local source of irritation or some obstruction which should be removed, and any irritation is carried back so as to affect the Eustachian tube. Those small spurs on the septum are just as important to remove as the large ones. I compare the nasal obstruction to the condition of strabismus. If one eye is greatly diverted, the patient does not pay any attention to it except for cosmetic reasons, but with a small degree of insufficiency, when he is trying to see with both eyes, he has headache and diplopia. A mild degree of astigmatism will frequently produce more trouble than will a greater defect. If there is a marked deformity in the nose, the patient often gets used to the trouble and gets along fairly well, but with the little defects, where nature does not produce compensatory changes, there is a constant irritation. Next as regards what effect these corrections will have on ear trouble. When I have patients with impaired hearing, I learn first whether they hear better at one time than another. As sure as they say yes I find defects in the nose, and I always tell such patients that if we can get the defects out of the nose we can greatly improve or even cure the ear trouble. I often talk plainly when the hearing is impaired and tell them that they must not expect to be cured in a short time. I then start in on the nose and throat. Later on the pneumatic massage and other treatment is directed to the ear proper, but early in the game the treatment is nearly all directed to the nose and upper throat.

Dr. L. C. Cline (Indianapolis, Ind.). I am sorry I did not hear the first part of the paper, but I commend the doctor on the clean-cut description of the operation, and especially on doing the operation where not contra-indicated, in the beginning. I have had experience in allowing the patient to go and think about the matter for a week

or two, and tell all their friends and relations about the great operation they are going to undergo, and get all the advice they can in regard to it. The fear and damage that is done is more than any little shock they may get from the immediate operation. I like his method of doing the operation at once before letting the patient go home.

Dr. L. J. Goux (Detroit, Mich.). My idea of the anatomically perfect nose has undergone considerable evolution. I believe a person may have a slight spur or deflection and still have an anatomically perfect nose providing the respiration is normal. I believe the nose and throat specialists make a mistake in operating some times on spurs which have no significance. If you try to find an anatomically perfect nose you will have to go a long ways to discover it. I believe the method suggested by the doctor in not packing the nose after the operation is good. I seldom do it. I sometimes use adrenalin in the operation, but we often have unpleasant consequences and I prefer to have the patient do the bleeding in the office and not afterwards.

Dr. Donovan (closing). The paper covers the matter of the anatomically perfect nose. The question is this: A patient comes to me having been operated on in New York, San Francisco and even stopped over in Chicago; all have done operations, then I must do one before anyone else gets him. Most of these operations seem to have been necessary and proven beneficial. Then, why should not the first man have completed the job? Unless the packing is put in very tight to prevent hemorrhage it does more harm than good. You can check the hemorrhage with adrenalin during the operation, and let the patient take it home and spray two or three hours, repeating lightly every half hour if indicated and they will not have hemorrhage. I prescribe a drachm to the ounce for home use. I would not care to have my nose packed thoroughly except in case where the hemorrhage could not be controlled. The chief thing I want to emphasize is the necessity of curing the nose, and doing it at once, and doing it thoroughly.

Turbinectomy.—By Dr. Dudley S. Reynolds, Louisville, Ky.

To be Published in a Subsequent Issue of The Laryngoscope.

DISCUSSION.

Dr. M. A. Goldstein (St. Louis). In view of the very remarkable results reported by Dr. Reynolds in the majority of his cases, and

the rather mediocre ones that some of us have had in many similar cases, it is difficult to determine what the cause of this great difference of opinion may be.

In the first place, the description of the cases reported by Dr. Reynolds should be more definite, especially as to the unusually favorable prognosis. Then again in many of these cases he has detailed the presence of large quantities of tissue, and states that as a result of the intra-nasal operations which he performed, absorption of the adenoid tissue took place. He also refers to several cases of chronic catarrhal otitis media complicated with hypertrophied turbinal tissues, and states that after the removal of the turbinates, rapid improvement of the aural affection ensued. What we should especially like to know in these cases of adenoid and aural complications is "have the adenoids been absorbed and the ear conditions vastly improved as stated in these reports simply as the result of the turbinectomy?"

Dr. LOCKARD. I think the entire principle advocated in this paper is wrong and pernicious. It is wrong and unnecessary, because perfect respiration can be obtained with less extreme measures. Normal respiration can be gotten by the removal of the inferior edge of the turbinate, taking a small sliver of the bone, which leaves a permanent scar. I think complete turbinectomy is based on a pernicious principle from the fact that it is almost certain to result in atrophy. These cases will later have a dry condition, particularly of the nasopharynx, which is most annoying.

Dr. BULLARD. I would suggest that if Dr. Reynolds will keep watch of these cases for five years and then report, he will not advocate such radical work. He says that the cases which have adenoids seem to be cured. I think the adenoids are dessicated, dried up as it were, by the want of moisture in the inhaled air.

Dr. BUCKWALTER. The majority of us do not operate enough in the nose. We do not remove enough tissue; but looking at the specimens here, it seems as though the other extreme prevailed and you will notice on the posterior portion of each, a sponge-like tissue, evidence of posterior hypertrophy. The reason a great many of us fail to get relief from ear affections and free nasal respiration, is because we do not remove this posterior hypertrophy. Often in my practice patients will say they can breathe perfectly yet one can see far back the posterior hypertrophy hanging down, and with a probe can push it upward and forward into the meatus. Dr. Reynolds, as his specimens show, removes this hypertrophy. I have been able to

remove it without taking all the inferior turbinal body. I use a strong snare, and after doing a partial turbinectomy put the snare well back and having it at an obtuse angle at the juncture, place it over the posterior hypertrophy. Frequently after delivering the obstruction the hypertrophy is as large as the tip of the little finger, or larger. Of course when we apply cocaine or spray adrenalin it shrinks, but in the pathological state it is as large as stated.

Dr. DONOVAN. After just having advocated the thorough surgical treatment of all deformities, I would be willing to have any operation, which I have described, performed on my nose by any competent man, but not under any condition would I be willing to have this done.

Dr. LARGE. There would be great danger of the patient developing a pharyngitis and laryngitis on account of the cold air passing through the open nares.

The doctor does not say what would have been the results if he had removed the adenoids, polypi, and enlarged tonsils, instead of doing a turbinectomy.

Dr. H. W. LOEB (St. Louis). I consider the removal of the turbinate to this extent one of the most serious operations which we are called upon to do. I know it is called for at times, but I am thankful to say it has been called for seldom in my practice. I should weigh the chances of the results, not so much in so far as the immediate results are concerned, but as regards future troubles. It will give ample room for respiration through the nose, but I deny it gives ample nasal respiration, because that means proper heat and moisture of the air passing through the nose. If you take out the turbinate you cannot get it. We should be careful in regard to this, no matter how much or how little of this turbinate is removed. I have seen noses designated as cured by taking out the turbinate bone, and years afterwards not only had they the same troubles again, but there were other troubles which were vastly worse. I am glad indeed that I have not thirty-four turbinates to charge against my account.

Dr. POPE FARRINGTON (Memphis, Tenn.). I have had quite a personal experience with this operation, having had both my lower turbinates removed five years ago. They were much hypertrophied and met the septum on both sides. However, I cannot agree that the entire turbinate should be removed. My experience is that we may suffer with a pharyngitis after this operation following sudden changes of temperature. The air passing through too freely has not the moisture which it should have, and I attribute these

acute attacks to this condition. It has been my practice to take a middle ground in this operation and remove only the dependent portions of the turbinate.

I find that such an operation relieves all symptons complained of and still leaves a sufficient amount of mucous surface from which the air may get the proper amount of moisture.

Dr. H. B. HITZ (Milwaukee). Some years ago on my return from abroad I brought a Carmalt Jones spokeshave and for a while performed many very neat operations of this character. But I gradually came to the conclusion that the operation was crude and unscientific, and that more satisfactory results could be obtained by more rational methods, such for example as the view expressed by Dr. Lockard of removing the lower margin of the inferior turbinate, or the operation of Dundas Grant, of removing a triangular portion from the anterior end of the inferior turbinal body, thereby alowing free circulation of air under this organ.

Dr. D. T. VAIL. I wish to say that we, as a scientific body, should call things by their right names. I see Dr. Reynolds has called his operation by the right name, but the operation we most of us do should be called *partial turbinectomy.*

We do partial turbinectomy for two reasons: namely, to improve respiration and benefit aural conditions. In the former the operation should be limited pretty much to the anterior half of the turbinate, removing the edge of the bone and overlying tissues. In the latter the operation should be done on the posterior two-thirds of the turbinate with the endeavor to get the posterior hypertrophy. The air can pass around the front third of the turbinate and the patient will have no trouble with nasal respiration and no chronic pharnyngitis, and the results as regards the ear will be as good as those mentioned by the essayist.

Dr. KYLE. Dr. Reynolds has confered a great favor on the society to the extent at least that we will be able to follow the effects of this operation in a great many cases. I have never seen atrophy of the mucosa following a surgigal operation on the nose. I shall watch Dr. Reyonlds results in the future with great interest.

Dr. A. H. ANDREWS. According to my observation, I have felt that the removal of a portion of the inferior turbinate, at least in a majority of cases, gives room for all the air to pass that could get into the anterior meatus. I have been much interested in the report, as evidently the rest have been; and I am willing to wait a while, and even to make some experiments along this same line, with

the consent of my patients, in order to determine for myself the result of this operation. I am hardly ready to condemn it as completely as many of the physicians here have done.

Dr. BECK. I have not the least doubt about Dr. Reynolds' results. I believe everything he says is true. We have all read of late a good deal and been lead to believe that nasal polypi were not due to enlargement of the turbinate bodies, but to diseases of the sinuses. I also believe that if the middle turbinal body had been removed instead of the inferior, respiration would have been better and many of his cases of nasal polypi would have been better attacked.

Dr. PYNCHON. Harris of New York also reports this operation with beneficial results. In several of these cases reported by Dr. Reynolds, my preference would have been to remove the deformity upon the septum. To do a turbinectomy so as to leave too large a space, interferes with the proper ventilation of the nose, because it allows the air to go through in too large a stream. I do not see how removal of the inferior turbinale is going to cure nasal polypi which have been dependent upon the ethmoid disease, but I do think in these cases a considerable portion of the middle turbinate should be removed. You will get a tendency to atrophy by removing too much of the inferior body.

Dr. PARKER. I had an experience with complete turbinectomy. It had been done two years and troubled me more than any other I have had in my life. Pharyngitis started up frequently and could not be relieved. I got no relief as long as the man lived—he was killed—for he was always after me because I did not cure him.

Dr. REYNOLDS (closing discussion). I am quite delighted with the discussion. I put my paper in the form I did for the purpose of bringing out discussion. Dr. Goldstein wants to know how adenoids disappear, and what are the ear conditions. The adenoids, perhaps, do not entirely disappear, but they undergo shrinkage and in many cases there is great improvement, particularly in cases of obstruction of the Eustachian tube. In case of narrow nasal passages, very little swelling closes the upper passages, and the lower being blocked by the large turbinal body, or the projection of septal ridges, or being so low as to come in contact with the floor of the passage, I think the only right or rational treatment is to take out the entire turbinate. As to the amount of experience I have had in the operation, it has extended through many years. The first I did was in a case upon which I had operated on the same side of the nose taking away part of the bone. When I took out the entire inferior turbinal body the

patient was relieved. This was in 1885. I know that gentleman has had no trouble since, and prior to that time he had been a very constant patron of confreres as well as of myself.

Dr. Lockard thinks it pernicious practice and would prefer the obstruction to the atrophy. I would like him to explain what atrophy he means. It creates no atrophy. The wound is along the border of the inferior turbinate at its attachment to the perpendicular wall of the palate bone and there can be no atrophy, except of the cicatricial tissues along the line of division.

Dr. Bullard think all cases should be followed for at least five years. A great many cases I did follow up for more than five years, and the results were so gratifying that I determined in all cases of obstruction where it was distinctly apparent that the chief offending body was the inferior turbinal, to take it all out, as otherwise there is liable to be such a swelling as to re-establish the blockade.

Dr. Buckwalter thinks the operation too radical and would use a snare. Permit me to differ from his opinion. I could not accept the statement that he removed the projecting end of the inferior turbinate with a snare. If he will undertake to saw it he will often find it as hard as ivory and ⅜ inch thick.

Dr. Donovan under no circumstances would permit the operation on himself. He does not understand the operation, and he has not conversed with the patients who have had it done. If he will come down to see them, or permit me to send some of my traveling men to his office, he will change his opinion.

Dr. Large says it produces, or tends to produce laryngitis: I do not believe that at all. The infection in the atmosphere may cause laryngitis whether nasal obstruction exists or not. In all cases of nasal polypi the object in removing the inferior turbinal body is to get drainage and afford a free outlet to the fluids from above. The passages being narrow, when swelling takes place they are closed, and the inferior turbinal body keeps up the obstruction, and maintains the contact between the opposite walls, abrasions occur and granulation takes place, and a polypoid growth is the result. No permanent relief can follow the removal of the polyp merely, as the same conditions which produced it still remain. Remove the entire inferior turbinate and drainage will prevent closure of the passages above.

The Tympano-Mastoid Operation in Chronic Suppurative Otitis Media.—By Dr. Albert H. Andrews, Chicago.

See The Laryngoscope, *December, 1904, Page 944.*

DISCUSSION.

Dr. W. E. Briggs (Sacramento, Cal.). I am much pleased at this paper. It has been for me a difficult matter which presents itself every day in my practice to know what to do with the chronic suppurative cases. At some stages of my practice I have advised radical operation more than now. Some years ago in Paris in Luc' clinic, he told me he advised radical operation if he could not cure the case in a month. If he found granulation or polypi in the ear, that was another indication for a radical operation. In his practice this may be a good rule, but in the hands of many less skilled operators with less experience, it would be safer for the patient to defer the operation until he had tried other and more conservative treatment of the ear conditions. The radical operation does not always cure the case. The treatment is usually tedious and long and more or less expensive. In my own practice I know I have found many cases of granulation and polypoid growths become perfectly well in a few months, and I would not lay down a hard and fast rule as some do. I think the essayist's advice is good on that account. It is a matter of judgment, and probably as much a matter of personal experience and skill in the operation as anything else and as in any other operation. The operation Dr. Andrews advocates is certainly a good one. I think occasionally he might place Thiersch skin grafts on the bone that is not covered by the posterior flap of the meatus and get much more prompt healing of his cases. I have had cases which were perfectly covered with skin in ten days; one case within two weeks went home perfectly well and has been well for two years. The secretion from a granulating surface prevents the cavity healing as promptly as it would if the whole wound were covered with skin.

Dr. Bryant. It seems only fair that when the symptoms are not urgent, the patient should have the benefit of the doubt and receive local treatment with the expectation of recovery. Even where there is discharge and granulations and caries (not extensive) there is a very good chance. There are occasional irregularities met with in the temporal bone, even the facial nerve sometimes takes an unusual course, (See the case reported by Berens) passing downwards and outwards from the oval window to emerge from the bone near the level of the external end of the osseous meatus. To avoid the deleterious results of hammering on the cranium, the front bent gouge

can be used very effectively. It also lessens the danger of accidentally penetrating the dura, and if desirable it can be used with a mallet.

Dr. ANDREWS (closing discussion). There is no time limit, in my judgment, for continuing the treatment in suppuration of the middle ear before advising the radical operation. I have seen cases recover that were treated for several months before recovery took place. But where conditions are found which make it improbable or impossible for a recovery to take place, then why should the patient go on with his life and health continually subjected to the danger which accompanies the presence of pus in the middle ear, when an operation, if properly done and taken care of afterwards, will cure the case? It is true that the radical operation does not always cure, but I firmly believe if it is properly done and then properly treated afterwards, it will cure; and I also think the after treatment is just as important as the operation itself. I did not say that the nerve never took an outward course after tending downward. I did say it is not often external to the posterior attachment of the drum membrane. I know we are prone to believe when we have a paralysis following mastoid operation that it is because the facial nerve pursues an anamalous course; but in the majority of cases the anomaly is in the mind of the operator, and not in the patient's facial nerve.

Ordinary Tonsillotomy.—BY DR. EDWIN PYNCHON, Chicago.

See THE LARYNGOSCOPE, *December, 1904, Page 931.*

DISCUSSION.

Dr. GOLDSTEIN. I wish to be among the first to name Dr. Pynchon the prince of mechanical geniuses in the Academy of Ophthalmology and Oto-Laryngology.

However, may I be permitted to say that I cannot see the occasion for so much fuss in the operative conduct of ordinary tonsillotomy. Heretofore the Mathieu or some other modification of tonsillotome has answered very well and there seems to be an immense amount of mechanical manipulation and unnecessary dissection to excise that poor little faucial tonsil. It is my opinion that as long as we can obtain satisfactory results with the usual technique to which we have been accustomed for several decades, and when the tonsil is not imbedded and there is no occasion for much preliminary dissection of faucial pillars and adhesions, the simpler the form of operation and the less the number of instruments, the better.

Dr. KYLE. I think the more fuss we make about instruments the better. I remember trying to use the Mathieu tonsillotome with harpoon. It became fixed in the foramen and after driving the harpoon through it became fixed in the tonsil. I hustled as well as I could and succeeded in getting out my tonsillotome. I have used the McKenzie, and found that the blade slipped down in trying to hold the tongue down, and I would only get a portion of the tonsil. A suggestion that will keep the blade in position until you slip the tonsillotome over the tonsil is a good one.

Dr. BALLENGER. I wish to speak of two accidents that occurred in the use of the Mathieu instrument in ordinary tonsillotomy, both recently, I think in the last week or two. I had the cutting blade of the tonsillotome break off, which fortunately was immediately spit out by the patient. Shortly before that, Dr. Beck had a similar accident with one of my instruments. This had been in use for some eighteen years, and had a right to break, I suppose. The lesson is that these accidents are liable to occur. Dr. Beck had an experience also in which the portion of the blade broken off was swallowed by the patient, and the X-Ray show the presence of the portion of the instrument in the patient's stomach.

Dr. REYNOLDS. Before the discussion closes I want to say a word. I have a long, narrow shanked, narrow bladed pair of scissors, curved at right angles to the direction of the shank, and I can take off the portion I wish with a single snip. I want to know what is the matter with that as an equipment for taking out the tonsil. I object to the removal of the entire gland. Good surgery demands that the altered or hopelessly diseased part alone should be removed by excision.

Dr. CLINE. I do not see the use of having so many instruments to do an ordinary, simple tonsillotomy. Of course Dr. Pynchon is an expert in getting up these things and he likes to use them, but I cannot see the advantage in using four or five instruments, when two are all that are needed. I seldom use anything but the tonsillotome and the tongue depressor. I gauge my instrument to the size of the tonsil, and I find myself using the same instrument now for almost all sizes of tonsil. I set it so that I can just force the tonsil into the ring. By getting well down into the throat, and then turning the instrument up you will be surprised how easily the tonsil, if not too much adherent, will be forced into the instrument. You can take out all the gland necessary by this method. I do not believe in taking every vestige of the tonsil out. We want to get rid of the obstruction and the portion that is diseased, and that is all that is necessary in the

operation. There is a decided difference of opinion about this. I do not use an anæsthetic, as a rule, only as an exception. I think the depression and the ill effect on the patient from the anæsthetic, to say nothing of the danger you run of sacrificing life, is something that is unnecessary. With the use of cocaine or eucaine, properly applied, I think it can be done with little pain. It is so quickly done. It is necessary to take a little time to engage the tonsil properly, then it is over in an instant.

Dr. D. T. VAIL. I want to offer an explanation of the accident which occurred three times in Chicago in connection with the old fashioned Mathieu tonsillotome. I saw this accident happen, and once it nearly happened to me. Having thought the matter over, I concluded the fault was not in the instrument, but was with the operator, or rather with the vulcellum forceps used.

Just as the tonsillotomy is about to be performed the patient sometimes gags and the left hand holding the grasping forceps has allowed the tonsil to slip back slightly and the sliding blade of the Mathieu tonsillotome gets caught on the teeth of the vulcellum forceps as it is being driven home.

Dr. GOUX. When I was in college, a professor of Internal Medicine said never to treat the symptoms but the cause of the disease. I believe we are getting away from the cause of the trouble. I do not believe it is so much the fault of the tonsillotome, but rather of the technique in not sufficiently releasing the tonsil from the pillars so it can be slipped into the instrument. Break up the adhesions properly and the tonsillotome in most cases will slip easily over the tonsil.

Dr. PYNCHON (closing discussion). In reply to Dr. Goldstein's criticism I will say that while the technical description takes considerable time, the operation does not take any more time than with the ordinary instruments we have been using. As regards the breaking of the Mathieu instrument I had one break once while loaned to a medical friend. It did not break on account of the blade being put in wrong, as that was impossible, it being one of my design, curved on the flat. There is no doubt but that the barbs are a bad thing. I used to always have them cut off. It seems to be a great fault that it is possible to put these instruments together wrong. I believe the only extra instrument I use is the mouth gag. As to the removal of the tonsil I believe the more we can remove the better. Bosworth was a strong advocate for the removal of the entire tonsil. In childhood the tonsil is not diseased but is hypertrophied tis-

sue. My own experience in the application of cocaine before ordinary tonsillotomy is that it is nil. The child objects to the operation as much with as without it. In fact its bitterness adds to the annovance.

Pharyngocele, or Diverticulum of the Pharynx.—By Dr. Wm. D. Black, St. Louis.

See The Laryngoscope, *October, 1904, Page 791.*

DISCUSSION.

Dr. Jos. Beck (Chicago). In the last December meeting of the Chicago Society I presented a case of a low pharyngocele between the œsophagus and pharynx in a man 70 years of age. He came to me for relief of a cough. The cough would not be relieved until he vomited. It would come on after eating. He had never had trouble until he was old. I treated him for pharyngeal trouble and sent him to a general man, who treated him for gastro-intestinal catarrh, washing out the stomach. He suggested to me that it might be a case of diverticulum, so we took the patient to the X-Ray laboratory and took a picture. I am sorry I did not bring that, for it showed beautifully that it was a diverticulum. I remember that Gussenbauer reported several cases excised by the external route. If this patient had not been so old I believe I should have suggested operation. In Dr. Black's case, I see no reason why the gentlemen, when they made the diagnosis, did not suggest an operation.

Dr. Loeb. I had the pleasure of seeing this case and was much interested in it, and on account of the rather harsh treatment he received at my hands he could not be prevailed upon to see me again. But I saw nothing in the case that did not justify a diagnosis of diverticulum. The mass is well described by Dr. Black, particularly the startling effect of this mass springing out and resting on the molars. The operation would have been easy to perform. He gave a history of two years, but he may well have had it longer than that. It was a very interesting case.

Dr. Goldstein. Diverticulum of the pharynx is an unusual thing, and I was glad to see this case. The reason I offered a favorable prognosis was that the patient had been getting along well for a year or more, and this condition of the bulging of the pharyngeal diverticulum had been less frequent in the past few months, and the galvanic treatment had been instituted. As the protrusions were becoming less marked, I felt a favorable prognosis was proper in the case.

Dr. BLACK (closing discussing). My reasons for not operating were: 1. That the patient would not consent, but said he would later if he didn't improve and if I could not get him well. 2. Most of the leading authors gave such a good prognosis that I was not in any hurry to operate. 3. There was no emaciation and the patient was apparently healthy.

In the case mentioned by Dr. Beck, he found a tumor filled with food; while in my case there was no tumor apparent externally, which in my opinion was due to the sack being closed at its upper end when in the position of rest. The sack became longer as it grew older and was probably lengthened by being frequently forced upward by the constrictors contracting.

Grave Hemorrhage Following Tonsillotomy.—BY DR. L. C. CLINE, Indianapolis.

See THE LARYNGOSCOPE, *December, 1904, Page 921.*

DISCUSSION.

Dr. THOS. FAITH (Chicago). I personally have had considerable experience with the use of calcium chloride in bleeders. From the standpoint of the physiology of the coagulation of blood, calcium salts are important fibrin forming factors. It may be given, however, in larger doses than Dr. Cline gave without, in the least, causing any unpleasant symptoms. I have given it in children in 15 grain doses, taking particular pains to get the C. P. crystals. I want to say in addition that internally gelatin is of advantage in preventing hemorrhage. The patient is given large quantities of gelatin to eat in all forms in which he can take it, or it may be injected into the bowel. If he be a bleeder, this administration may be kept up for weeks before the operation is undertaken. Gelatin being an albuminoid, it facilitates coagulation. While it can not be utilized as a proteid, yet it favors the coagulation of the blood by saving other proteids which are important fibrin forming factors.

Dr. REYNOLDS. I call attention to the well-established hemostatic action of gallic acid, internally administered. It is always well borne by the stomach, even in children. Five grains of gallic acid every three hours, in my opinion, would have stopped the hemorrhage.

Dr. PYNCHON. This is a matter that strikes all of us. My custom in practically all cases is to give them such advice in advance as will prepare them for emergencies in case there is a hemorrhage after leaving the office. The best thing, of course, is to prevent it, and for that reason I prefer to operate on only one tonsil at a time. Certain

things have caused hemorrhages in the past, and the best thing is to warn patients against doing these things. I have gotten out a printed sheet of directions to give the patients as regards diet, etc., and one section I devote to hemorrhage. The one thing as satisfactory as anything I use is the gargling with very cold water. This means a glass of pounded ice with a little water in it. Gargling with this will have a very pronounced effect. If a little alum is put in the water it is about as good as anything. I also give the formula for the tanno-gallic acid mixture, and I tell them if the gargle of ice water does not stop the hemorrhage to then take this mixture as directed. There are also directions which I have added with the object of being of assistance to the physician who may be called in, and one of the most valuable things I have found is the Ergone of Parke, Davis & Co., a new preparation used hypodermically. Morphine also is of benefit.

Dr. CLINE (closing discussion). As I stated in the paper, the ordinary precautions were taken in this case, and one of the points made is that we may be misled, intentionally or otherwise, in these cases. I was particularly careful to investigate about the diathesis. I always keep a compressor or hemostat to use in cases of adults; but this was a child, and after the bleeding had begun the second time, the child became so irritable that I could not use it to advantage without great disturbance, possibly creating greater hemorrhage.

Diphtheritic Inflammation of the Middle Ear without the Formation of Diphtheritic Membrane—FRANZ KOBRAK—*Arch. f. Ohrenh.*, Leipzig, July, 1904.

Suppurative inflammation of the middle ear, caused by diphtheria bacilli may occur without the formation of diphtheritic membrane. The cases present clinical features which are in no wise different from ordinary middle ear suppurations, and can be recognized only by bacterial examination of the discharge. Not only may such diphtheritic suppuration of the ear be associated with membranous diphtheria of the throat, but it may also occur without previous clinical diphtheria of the nose or throat.

The author claims that if all ear discharges were examined for diphtheria bacilli, a surprisingly large number would be found to be of diphtheritic origin. The importance of this fact from a clinical as well as from a sanitary standpoint, is of course evident.

YANKAUER.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.

Tenth Annual Meeting, Held in Chicago, Ill., May 30, 31, and June 1, 1904.

The Society met at the Auditorium Hotel, under the presidency of Dr. Norval H. Pierce, of Chicago.

An address of welcome was delivered by Dr. Frank Billings, of Chicago, on behalf of the local medical profession, after which the President delivered his address.

PRESIDENT'S ADDRESS.

President Pierce pointed out the great changes that had been wrought in the special domain of laryngology, rhinology, and otology during the life of the Society. Ten years ago it was hardly more than a matter of sprays and spurs, of snares and syringes. The members no longer confined themselves to intra-laryngeal, intra-nasal and intra-cranial operations, but by most radical external surgical procedures it was the aim to cure the most extensive diseases of the nose and accessory sinuses, the larynx, the pharynx, the ear, and neighboring parts within the cranial cavity. This change had taken place gradually. It took years of endeavor to set the bounds of laryngoscopy, rhinoscopy, and otoscopy. Laterally, by the work of Killian, Jensen, and of many of the Fellows, the advance had been made more rapidly, so that at the present time the well rounded and successful specialist must not only possess that special skill and dexterity which enabled him to examine successfully the larynx, the nose, with the orifices of the several accessory sinuses; the ear, both by otoscopy and by means of complex functional tests, but he must combine with this a broad surgical knowledge equal to that of the general surgeon, and an ever accessible knowledge of regional anatomy superior thereto. Thus did they prove the right to exist as specialists and members of the surgical department of the great science and art of medicine; but he expressed the fear that the pendulum might swing too far in the direction toward radicalism. With the technique of external operations firmly within grasp, were not the members liable to resort to them prematurely—to forget that much might be done by more conservative local measures, etc.?

REPORT OF MEETING OF MIDDLE SECTION.

Dr. CHEVALIER JACKSON said they had a good meeting. There were about thirty members present. There were fourteen papers by some of the best men in the Society, and this meant some of the best men in this or any other country. The meeting began at 10 o'clock in the morning, and the scientific programme was finished by 5 o'clock in the evening. He heartily favored continuing the sections.

Exhibition of Mastoid Case.

Dr. WILLIAM L. BALLENGER presented a case in which there had been, after a secondary operation, Thiersch skin grafting in the mastoid wound. The surface was now almost completely healed except at the site of the orifice of the Eustachian tube. This was rapidly closing up, and he had no doubt that in a week's time it would be closed completely.

Some time ago he had another case similar to this in which the wound had been completely covered and the Eustachian tube closed. In this case he resorted to skin grafting in the mastoid wound, as in the previous case.

Exhibition of Specimens.

Dr. GEORGE L. RICHARDS exhibited some specimens, and said a word or two as to the relation of the dentist to maxillary antrum trouble. The first specimen was a tooth which set up antral disease, the result of a capped tooth. He had seen it stated in some publications that dentists had been held responsible for setting up antral trouble by capping teeth that ought to have been treated otherwise.

He showed two interesting specimens of foreign bodies removed from the nose. One was a pants button which a patient was said to have carried in his nose for seventeen years instead of on his pants. Another patient, said to have catarrh, had his catarrh cured by the removal of a cherry stone from the nose.

He showed a very large adenoid removed from a child, six years of age. The operation was done under ether anesthesia, the anesthetic having been given by a nurse. Just as the child was apparently under complete anesthesia, there was a spasmodic closure of the jaw, and immediately the child was asphyxiated. He had to resort to artificial respiration, hypodermic injections, forcing open the jaw, and traction of the tongue, otherwise he would have had a dead child. The adenoid was very large, completely occluding the nasopharynx, and when closure of the jaw occurred at the last moment of etherization, no air entered, and consequently the child was asphyxiated. The child's breathing could hardly be noted by the

anesthetist. A trained etherizer would have noticed it. Many times ether had been given by a nurse to his patients, and yet nothing had happened worth mentioning. In etherizing a child with adenoids, one should closely watch the mouth and see that respiration was not interfered with.

The last specimen was an arrow bougie, which was used in the early stages of acute earache. There had been a good deal of trouble to get these bougies properly made, but the urethral bougie maker, Dr. Mitchell, of Philadelphia, had made them and put them up in nice shape. He passed them around. They could be washed off with warm water, dusted with lycopodium powder, and one could slip one into the ear of any child. One practitioner told him that he had used the bougie in a case without effect. He examined the child and found one quarter of an inch of wax between the bougie and drum. The reason why the practitioner failed was evident. If the canal was patent in the early stage these bougies would do some good. They did not necessarily prevent incision of the drum, or anything of that kind.

Sarcoma of the Nose.

Dr. WILLIAM L. BALLENGER said a young lady came to his clinic some months ago with a broad nose, and with a history of some pain and complete occlusion on both sides. He removed nearly the whole of the right inferior turbinated body, submitted it to a pathologist for examination, and received a report that the process was tubercular. This report, however, was not satisfactory to him. He removed some more tissue, submitted it for examination, and received a report that it was granulation tissue. He felt the case was one of sarcoma and decided to operate without any satisfactory microscopic diagnosis. He operated seven weeks ago by the radical method, as in his opinion, if he had operated by the intra-nasal method, the occlusion would recur inside of a week. With the Roe saw, after making incisions on the side of the nose, he went through the maxillary bone, turned the nose down over the mouth, and through this route he was enabled to remove a large amount of necrotic and mole-looking tissue from the nose on the right side. He found the bone completely necrosed, and he could pass his finger readily through the opening before using the saw. With the curette and other instruments, such as a biting forceps, he succeeded in removing almost all the turbinated tissue from both sides of the nose, and thus far there was no recurrence of the growth. After submitting specimens of the growth to a pathologist, he received a report that the disease was sarcoma.

By operating in this manner he was enabled to remove more deeply seated tissue and thus get a correct report of the pathology of the growth.

This case illustrated the futility of relying absolutely upon microscopic reports in these cases, because in this case the microscopist, without knowing what it was, gave three different reports. First, he said it was a tubercular process; second, granulation tissue; and third, sarcoma of the nose. Whether tuberculosis was present or not, he could not say. The case did not impress him clinically as one of tuberculosis, but as one of sarcoma.

Dr. WENDELL C. PHILLIPS asked if syphilis was excluded in this case.

Dr. BALLENGER replied, yes. He could get no history of specific infection or any suspicion of it.

(a) Tonsillotomy Forceps, (b) Adenoid Forceps.

Dr. H. HOLBROOK CURTIS showed a set of tonsillotomy forceps which in his hands had proved to be very successful. The instrument was made by Matthieu, of Paris. The advantage of this instrument was that, in cases of children who had diseased tonsils, so small, however, that it was impossible to use a tonsillotome, the tonsil could be removed readily in one's office without an anesthetic. It was remarkable with what facility one could get at the tonsil and remove it. He had done a great many operations with this instrument. In a flat indurated tonsil very often while operating one found two or three drops of pus which explained the recurrent tonsillitis met with in these cases.

The other instrument was a modification of the fenestrated forceps figured in Bosworth's work. He had adapted it to the conformation of the posterior wall of the pharynx. With a forceps with an obtuse angle, one was apt to avoid a portion of tissue at the base of the vomer, but with a forceps at right angles, or five degrees less than the right angle, this little mass of tissue was entirely removed. It was this bit of adenoid tissue which furnished a starting-point for the recurrence of adenoid vegetations.

A New Mastoid Gouge.

Dr. WM. SOHIER BRYANT showed the adaptation of a tool which was used for wood carving. It has been found quite convenient in carving the mastoid process, and in cranial surgery, etc. It could be used like a lever, and with it one could work with great accuracy, and a mallet was no longer necessary.

New Head Lamp.

Dr. CHEVALIER JACKSON said some kind of light was necessary for all our work, but when a patient was under anesthesia the usual mirror used was not satisfactory, for every time the position of the source of light or of the operator's head changed, the mirror had to be changed. How some operators could get along without some kind of head-light as this, groping around in the dark as they did, and yet do the good work they undoubtedly did, he did not know. He did not know how they could tell normal from pathological tissue. One could tell diseased bone by the feel of the curette, but with the soft tissues he could not do this. For several years Dr. Day and the speaker had been using a lamp which he had devised for operating under anesthesia. It was a thirty-two candle power lamp, cheap, and could be bought for any current. It was frosted a little at the top in order to lessen the glare in the assistant's eyes. A little shield went back of it, which reflected the light forward and kept it out of the operator's eyes. It illuminated the whole field of operation, and gave plenty of light. It got hot enough to be sterile in its exposed part, but not enough to cause discomfort. The ordinary sterilized muslin operator's cap was worn over it, only the lamp and reflector projecting.

Tracheal Canula.

Dr. DAY and the speaker had had about eight cases of post typhoid fever perichondritis of the larynx, followed by stenosis, six of them requiring tracheotomy. In some cases, when the abandonment of the tracheal canula was attempted, the patient did not get air through the larynx, owing to cicatricial stenosis; consequently they performed thyrotomy, retracted the thyroid cartilage, eviscerated the larynx, clipping out all cicatricial tissue. To keep the larynx open, they devised a T-shaped tracheal canula, one portion of which went up, and another down. One portion went up into the larynx and kept the lumen of the larynx open until most of the danger from cicatricial contraction was over. Healing of the tracheotomy wound occurred around this, so that a T-shaped tube could not be introduced, and to overcome this they cut it apart in two sections. One piece was slipped downward into the trachea, the other piece upward into the larynx, and the two locked together by a collar slipping over them. Outside a tape holder kept the dressing in place. The trachea could be measured through the tracheotomy wound before the thyrotomy, and the instrument could be selected to fit it. When in position the epiglottis came down and covered the top of the canula, the entire

larynx being filled with the upper part of the canula. After the larynx was completely healed and its lumen lined with epithelium, one of these large intubation tubes was put in, in the usual way, through the mouth, the T canula abandoned, and the tracheotomy wound allowed to close.

Dr. GEORGE L. RICHARDS suggested a modification of Dr. Jackson's headlamp. It seemed to him it would be a very inconvenient thing to keep in place. It was always wabbling, first one way, and then the other. He was using a device which could be adapted to this lamp, and it could be obtained from most opticians. It was a perforated hard rubber ring which sets perfectly over the head, and could not be knocked off. One could adapt the same thing to this lamp with perfect ease.

Dr. CHEVALIER JACKSON said, in regard to the modification suggested by Dr. Richards, that after the laryngeal lumen had been covered with epithelium, one of the large intubation tubes was slipped in and the tracheotomy wound allowed to close. If this were put in immediately after operation, the post-operative swelling and edema would render it dangerous if it should be coughed out. If the intubation tube should be coughed out, the edema and swelling, attended with a certain degree of paralysis, would cause an immediate stenosis, and would probably kill the patient. Many patients had died in that way. Their method had been to allow the larynx to heal completely and regain an epithelial covering. They kept the tube in two or three months. At the end of that time some of the patients would let them take it out, while others would not. They realized the trouble incidental to cyanosis, and therefore, they were very much averse to having the tube taken out. If the tube was taken out say once a month, then there was very little or no danger of stenosis. The tube should be taken out at least once a month, because otherwise concretions would form on it.

He did not offer it as an improvement on the O'Dwyer tube. There could be no improvement for the purpose for which the O'Dwyer tube was used. This tube, with wedged-shaped point put in the diphtheritic larynx, might result in traumatism, which was a bad thing in cases of diphtheria. But here the conditions were entirely different. Furthermore, one had the eviscerated larynx to deal with, requiring a large tube with a large interarytenoid swell and large retaining swell.

Dr. EDWARD B. DENCH stated that while the device exhibited by Dr. Jackson seemed admirable, still the criticism would obtain that

one could not control the electric wire either in hospitals or in offices. He asked Dr. Jackson if the lamp had ever exploded. He asked the question because shortly after Dr. Jackson demonstrated it at the last meeting there were two accidents, one in his own hands, and the other in the hands of Dr. Delavan, of New York. The current was too strong, and the lamp exploded, doubtless due to imperfect wiring. If there was any likelihood of the lamp exploding on the operator's forehead, of course, it was dangerous for the patient as well as for the operator. Perhaps this would not happen if there was a good, strong safety fuse.

Dr. WENDELL C. PHILLIPS referred to the accident which Dr. Delavan had experienced, which might have been serious, and considered that the lamp which Dr. Jackson showed at the last annual meeting, in order to prevent any such possible accidents occurring, needed some marked improvement in the way of safety.

Dr. J. A. STUCKY stated that those who had not used this lamp, after having used it, would never be without it. It was as near perfect as could be for mastoid work, or any operation where one had a large field and wanted plenty of light. He suggested one improvement, that is, covering the wire over the metallic edge of the band with rubber tubing. This would prevent the danger of imperfectly insulated wire getting wet with perspiration and creating a short circuit.

Regarding the objection mentioned by Dr. Richards about the head band not fitting, he had never found that trouble.

The thing that commended the lamp especially was the brilliancy of the light, simplicity, and its general adaptability. One could adapt it to any socket in the house or any hospital. A rheostat was not needed. He regarded it as one of the best instruments to have in that line.

Dr. GEORGE L. RICHARDS said, with regard to the thirty-two candle power lamp and rheostat made, one would find the small lamp which he exhibited at two of the meetings of the eastern section very useful. He thought it was an improvement on the lamp of Dr. Jackson. It had a mirror, so that it reflected light, and one could use it with a good sized small lamp and get as brilliant a light as he could with this one.

Dr. EDWARD B. DENCH was very much interested in this subject, and hoped Dr. Jackson would not take his remarks in a spirit of criticism. This was a perfectly helpful piece of apparatus. He wanted it, however, free from danger.

As to the lamp described by Dr. Richards, with portable rheostat, he would say that in almost every instance where it had been operated in any regular hospital, something had gone wrong with the rheostat. He had used the instrument for a great many operations in hospital practice and had had no trouble, but if one put it in a strange plug something happened. He did not know what it was. When he was going to do operations in private houses, he thought Dr. Jackson's lamp would be a great aid to him.

Dr. NORVAL H. PIERCE had had three of Dr. Jackson's lamps for transillumination. One of them burned out in his own mouth; the other was broken accidentally, while a third exploded before it had been used. He had just screwed it into the socket, when there was a violent crash of glass, and everything was consumed. He screwed the lamp into the socket while the current was turned on.

He did not mention these accidents to throw cold water on the use of the lamp because he had been very much pleased with it and had recommended it. However, there was undoubtedly more or less danger attending its use, and it would be a very inconvenient, not to say dangerous, thing to have such an occurrence take place with a nervous woman.

Dr. CHEVALIER JACKSON said he had already consumed too much time in speaking on this subject, but at the risk of being tedious he desired to say a word or two more in regard to the head-lamp. It was an entirely different thing from the transilluminating lamp. Dr. Delavan wrote him regarding his experience with the transilluminating lamp immediately after it exploded. He wrote the manufacturers of the lamps, and they said that of all the lamps they had sent out, this was the only one they had heard of as having exploded. When these lamps came into use for general commercial purposes, and were manufactured cheaply, some of the lamps turned out were defective, and the Delavan lamp might have been one of that class. That these lamps could be made safe was claimed by the manufacturers. If his experience had been that of Dr. Pierce, or that of Dr. Delavan, he would not touch the thing, however, he had used the same original six lamps for several years and had not had any accidents or explosions, and he would continue to use them for that reason. He had no doubt that some defective lamps had been sent out, but what the defect was or had been he did not know. This, however, had nothing to do with the large head-lamp shown today. It could not explode.

Office Appliances.

Dr. WENDELL C. PHILLIPS exhibited and described several office appliances.

Dr. CHEVALIER JACKSON presented the following report, and exhibited a specimen, for Dr. John S. Mabon, of Allegheny, Pa.:

Report of a Case of Tonsillolith, and Exhibition of Specimen.

The principal point of interest in this case was the exhibition of the specimen, as unfortunately the author did not see the patient until after the tonsillolith had been expelled.

Mr. S., aged about 55 years, came into his office and stated that he had not called on professional business, but on a matter of scientific interest. For several months he had been troubled with a cough, especially in the mornings. At times it was so severe that it would produce emesis. On this particular morning it was so pronounced that he resolved to consult a physician. On his way to the doctor's office the man had an attack of coughing, during which he expectorated the tonsillolith. Dr. Mabon was rather incredulous, and asked the man if he had expectorated it on the sidewalk, from which he had recovered it. The man replied, rather heatedly, "I didn't imagine that it came from my throat, because I took it out from my mouth."

On examination, the only abnormal condition apparent was a peculiar glairy appearance of the edge of the posterior half-arch on the right side. On introducing his finger Dr. Mabon found a cavity between the half-arches fully large enough to accommodate the specimen. There was no hemorrhage following the expulsion of the tonsillolith, nor was there any denuded point on the membrane. It was his intention to have a section made of the specimen, and an analysis of the filings, in order to show both the strata formation and its composition, but the chemist advised against it, fearing destruction of its contour.

The weight of the specimen was 147 grains. Mr. S. told him that about ten years ago he expectorated a stone in the same manner, which was about the size of a split pea.

Operation on Frontal Sinus, Complicated by Post-Orbital Abscess.

Dr. ROBERT C. MYLES said that not long since he had a patient whom he tried to cure by a radical operation by removing the floors of both frontal sinuses, and in one of the sinuses he found that secretion took place behind the orbit, and being desperate in regard to effecting a cure, he followed the floor of the frontal sinus beyond the

eye so far that he got into the post-orbital space, and as a consequence he had a post-orbital abscess from infection. He did not see how he could have avoided it, and how he could have obliterated that part of the sinus unless he removed these floors. The man recovered with good eye-sight. A large quantity of pus escaped through an inch and a half incision, which was made. There was some inflammation of the retina, so that the case looked serious for a while. Patient had double vision, but this was relieved. In the future he would not go so far back; he would rather trust to better drainage into the nose. The unfortunate part of it was the stab behind the eye.

Some Points in the Pathology of "Bone Cysts" in the Accessory Sinuses of the Nose.—By Dk. Logan Turner, Edinburg, Scotland. (*Published in full in* The Laryngoscope, *Vol. XIV., No. 11, page 817.*)

Dr. A. Logan Turner, of Edinburgh, Scotland, read a paper on this subject.

DISCUSSION.

Dr. D. Braden Kyle was asked to open the discussion. He said he had been very much interested in the views of Dr. Turner. The question of cysts, especially bone cysts, was important chiefly in regard to etiology, the classification of which he gave as follows: First, those that formed in a cavity already existing, such as retention cysts, due to the dilatation of the follicles of the mucous membrane lining the cavity. Second, those resulting from some pathological process in the tissues, a cystic degeneration following inflammatory processes.

About the nasal cavities, either in the turbinated bones or accessory cavities, we had cysts, as had been shown. Nearly all of these cavities communicated with the surface. Personally, he believed he had seen quite a number of cysts of the turbinate involving the ethmoid cells, which were largely retention cysts.

A curious feature regarding cysts was that, as a rule, they formed in localities of good blood supply, with the exception of those found in bony cavities. Occasionally one found cysts forming in cartilaginous structures, but this was rare. With the exception of dermoids, he believed the original exciting cause of cysts was undoubtedly an inflammatory one. With the minute openings of the various cells of the turbinates and accessory cavities, it was readily understood why we could have beginning retention cysts.

Dr. FREDERICK C. COBB said he had three or four cases of dentigerous cysts and had therefore been much interested in what Dr. Turner had said. There were two or three points in his paper which impressed him as being of the greatest interest. One was that a diagnosis between antral disease and cyst after puncture of a dentigerous cyst was comparatively easily made. If one first punctured the wall, he went through the thin shell of the bone cyst, and then through this wall, if a tube was introduced, the fluid would come out freely around the canula; then without removing the canula, if the trocar was pushed farther, fluid would come out through the nose, so that one could differentiate easily between antral disease and cysts.

It was an interesting thing to him to see whether these cysts subsided with simple puncture and the removal of the tooth. He took the trouble to trace his cases for a year or two, especially those which had simply an offending tooth removed, and he found to his surprise that in that interval the whole bony wall had subsided, so that the face was normal in appearance, whereas before the puncture the antrum seemed much larger, showing that operation on these cysts was certainly frequently unnecessary, and that cases did not require more than the removal of a tooth and puncture to effect a cure.

Dr. ROBERT LEVY said, in addition to the symptoms enumerated by Dr. Turner, in a few cases of cysts of the middle turbinate he had seen, the most prominent symptoms had been reflex ones. In a number of instances there was pressure, inducing very pronounced neuralgic pains and sneezing. In one instance he felt he might attribute asthma, at any rate in part, to the pressure of a large middle turbinate cyst.

Dr. ROBERT C. MYLES said it was probable that from the earliest time these bone cysts had been associated with nose trouble. Attention had been called to cysts in the ethmoidal region by ophthalmologists, and, if possible, it would be interesting to know the probable cause of them before beginning treatment. The condition seen in these cases was evidently due to extension of the pathological process, and this extension must be ascribed to confinement. Whatever the incipient change might be which started these cysts in their embryonic state, so to speak, it needed further consideration.

Most of the members had undoubtedly seen cases in which there had been an extension of the pathological process from the sphenoid bone to the frontal, but which did not require any operation. These cases were easily cured by making a large opening from the cavity into the nose, inserting gauze and retaining it until the walls had become hardened.

Cysts of the antrum were moderately common, and the author's experience had been that the outer wall of the antrum became so thin that the finger could crush it in about the malar ridge, and one could easily penetrate this ridge for operative or other measures of treatment.

About two years ago he was called by a prominent physician to assist him in operating on a woman. He stated that the woman would not consent to have any one operate upon her except himself, but he wished Dr. Myles to be with him. The case was one of large cyst of the antrum. Some destructive changes had taken place in the wall of the cyst, and there was a purulent condition. Under his direction the surgeon made an incision about an inch and a half or an inch and a quarter in length, curetted the antrum thoroughly, and got a large opening. The woman made an uninterrupted recovery.

As to frontal sinus disease, the last case the author had was a woman, 73 years of age, who had a cyst extending from the frontal sinus to the anterior ethmoidal sinus. In removing the anterior ethmoidal cell it was his intention to remove the anterior part of the frontal sinus, also to remove the anterior ethmoidal. The woman's heart failed under the anesthetic, and she was practically moribund. He had made a promise that in the event of serious trouble he would stop operating. He removed the anterior ethmoidal cells under cocaine, and made a complete opening from the front. At the end of three weeks the woman was perfectly well. How long the condition had existed he did not know.

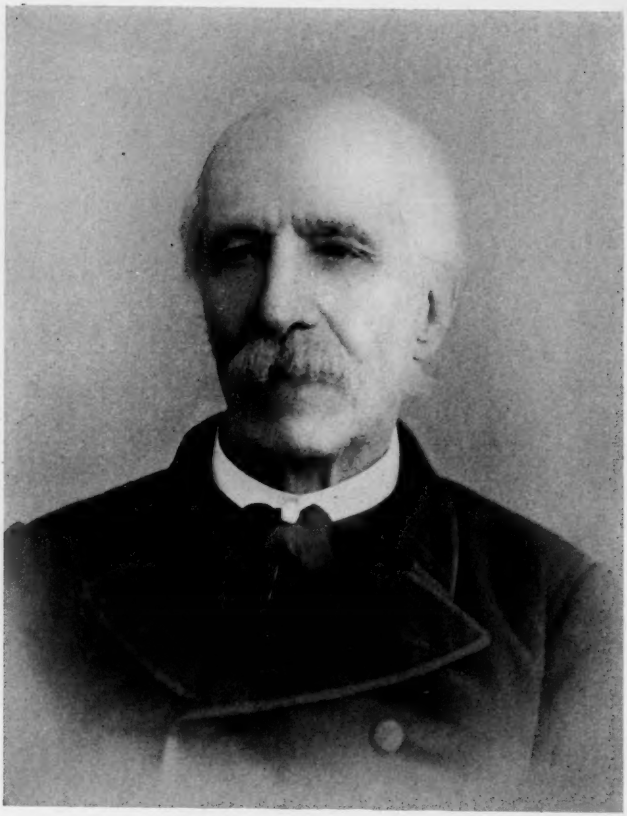
Dr. TURNER, in closing the discussion, thanked the gentlemen for the very cordial way in which they had received his paper. There were many points he would like to discuss, but time did not permit him to do so.

(TO BE CONTINUED.)

Radical Operation on the Mastoid under Local Anesthesia—HEINRICH NEUMANN—*Wien. klin. Wchnschr.*, Oct. 13, 1904.

The author operates with a 1% cocaine solution injected as follows: In the skin and under the periosteum of the mastoid along the line of incision, under the periosteum of the posterior wall of the meatus and of the superior wall near the attic. He claims that in this way the operation can be done painlessly.

YANKAUER



Yours very truly
M Garcia